GUY'S HOSPITAL GAZETTE 1ST SERIES VOL 4 1874

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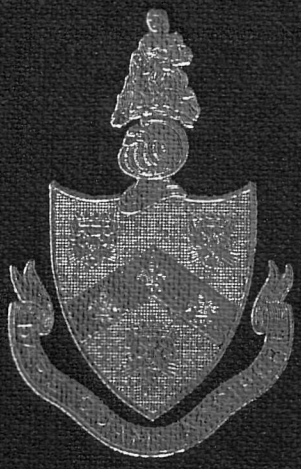
Guy's Hospital Gazette.



Guy's Hospital Gazette.

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GUY'S HOSPITAL MEDICAL SCHOOL

Presented by
The Presidents of the Physical Society
March. 1878

Guy's Hospital Gazette.

VOL. IV.—NO. 1. SATURDAY, APRIL 11, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

As the imagination bodies forth
The forms of things unknown, the student's mind
Turns men to ghosts, and gives to mortal being,
The credit of a devil.

Why this should be we cannot understand, but, nevertheless, there is a certain amount of truth in the idea conveyed.

Just at this time, the long anticipated April examinations at the College of Surgeons are being actively carried on, and men are sent from that building daily—some with pride and glory, others dejected and with disappointment. In our columns we publish the names of those whose share it has been to come off victorious. To them we offer our congratulations, but there are some whose fortune it has, been not to pass, with them we would sympathise sincerely and, for the benefit of those whe have yet to go through the ordeal, we would offer a few remarks.

There seems to be an all-pervading idea that going up for an examination is almost tantamount to going up to stand before an awful tribunal, constituted for the express purpose of ferreting out all the little deficiencies in one's knowledge, and having duly bullied thereon to refer the unlucky student to a further period of study, and with this idea, at once disastrous in itself—many enter the room for their *viva voce* examinations, very nervous, hands shaking, lips trembling, voice thick and husky, and memory gone nobody knows where; this may appear nonsensical but it is true, otherwise how can one account for the absurd incoherency in some of the answers? A man is shown a kidney split in halves, "What's that?" says the examiner. "Part of the brain, Sir," says the student. An over-anxious student, waiting in the colonnade to be called up, catches hold of a friend who has just come out of the room, "What did you get? What did they show you?" says he. Then kindly the poor fellow is told that the examiners had a peculiar preparation of a penis. "Mind you recognise it, it's very funny," says the informer. In due time up goes the poor student, brimfull of the peculiar preparation, and the first thing he is asked about is a pancreas in pickle. "What's that, sir?" says the examiner. "A penis," quickly retorts the student with delight at being able to recognize his old friend, but entirely without thought or consideration. Now, these things have occurred in our time and to our knowledge and they serve as examples of harm, arising from getting flurried and losing all regard for consideration and proper thoughtfulness. Bear in mind the examiners at the College, or anywhere else, are but mortals, and their only object is to see if you know your work; they do not ask abstruse questions, if they do, they won't pluck you for not knowing them. The questions are fair and nothing beyond what you ought to know, of this rest assured, and then what have you to fear? Nothing at all. If, instead of always saying and thinking that examinations are all there is to work for, you remember and bear in mind it is to fit and qualify yourself to practice in the profession that your are studying, then the whole affair of studentship appears under a new light and examinations bear quite a secondary aspect the primary consideration being to excel in knowledge, and to possess such skill as shall render one able to carry into effect that knowledge, and apply the same in relieving the pain and suffering connected with, and in some cases curing disease. Looking at things in this light, is, of course, a great consolation to those who are referred to their studies, for surely it is to a man's own advantage to possess a thoroughly sound basic knowledge of the profession before he enters on practice, and the examiners instead of being the fearful monsters that some suppose them to be, are in reality only fulfilling a double office, guarding the profession on the one hand and on the other acting as a competent registrar of your knowledge, indicating faithfully when they find your attainments sufficient to merit the reward of passing without further study.

LECTURES ON MEDICINE.

—o—

DISEASES OF THE RESPIRATORY ORGANS.

PHYSICAL EXAMINATION OF THE CHEST.

(Continued from page 195, Vol. III.)

We now pass to other morbid conditions of the lung. If a lung be consolidated, as in pneumonia, the natural breath sound is obstructed, and nothing is heard but the air passing in and out of the tubes. This sound is carried direct to the ear through the good-conducting solid lung, and thus we have what is called *bronchial or tubular breathing*. We, in fact, hear all over the lung the same sound, which is a normal one, when heard over the bronchi between the scapulæ. As the lung cannot expand, it has been thought that no air can pass in and out of the lung, but that the sound which is heard is only transmitted from the healthy side. There seems no reason, however, to doubt the capability of air being dragged in and out by the current which passes down the trachea to the healthy lung of the opposite side.

Now, if there be a large hole or cavity in the lung, the air is heard to pass in and out through the tube which enters it, and the ear can at once discern from the sound that a cavity must be present. It is therefore called *cavernous* breathing. The sound is with difficulty distinguished from the tubular before mentioned, and I shall refer to this again. If fluid be present in the cavity, and the air passes through it, we have the same sound as mucous râle in bronchitis, but being localised we give to it the name of *gurgling*. When we use this term we imply the existence of a cavity, but in many cases the sound not being distinguishable from a mucous râle a bronchitis may really be present.

Sometimes the cavity in the lung is of great size, occupying half the organ, and the walls at the same time may be very thin and large tubes may be entering into it. Under these circumstances the ear at once appreciates from the resounding of the voice and cough, and from the excessive hollowness of the sound as the air enters that the cavity is very large; indeed the breath sound is like that produced by blowing into a pitcher, it is therefore called *amphoric* breathing. The sound is more commonly heard and to greater perfection when the space full of air is altogether outside the lung and in the cavity of the pleura. Then it is that these amphoric sounds are best heard.

Having now told you of the morbid sounds which yon hear in the tubes and lung substance, whilst the patient breathes there is only one other structure to remember, and that is the pleura. If lymph be on the surface of the lung, and the patient breathes you may hear a *pleuritic rub*. This is generally double, but it may be heard with inspiration only. It is heard always best at the lower part of the chest where the lungs are most movable.

Voice.—Having endeavoured to discover the various morbid sounds during inspiration, we now make the patient speak. We ask him questions or tell him to count. In health, when a patient speaks, the voice vibrates through the chest. The words do not remain distinct, but are confused and lost. Sometimes, however, the articulation is precise and defined, the words passing directly into the ear; in fact, more clearly than the words spoken by the mouth pass to the other ear through the air. Now, in the case of a cavity, as I mentioned before in speaking of Laennec's discovery of the stethoscope, the voice becomes painfully distinct to the ear. This is called *pectoriloquy*. The intensity often varies with the tone or timbre of the voice, so that sometimes a whisper is carried more directly through the chest to the air than would a full-toned note. It has been said that if a patient blows the scale through pitch-pipes some notes are more easily transmitted than others. Now, there are other circumstances under which the voice comes direct to the ear in the same manner, and that is when the lung is consolidated, as in pneumonia. The voice is transmitted down the bronchial tube and carried through the good-conducting lung direct to the ear as before mentioned. Under these altered conditions the sound is not called pectoriloquy but *bronchophony*. The usual explanation of the better conducting power of hepatized lung to account for the phenomena is to me quite sufficient, and therefore I teach it, but there are those who are not satisfied with it, and maintain that bronchial breathing and bronchophony are produced for other reasons; they say that the voice is produced in the larynx, and that the bronchial tube being surrounded by hardened walls take up the notes produced in the larynx above and repeat it; that the tube, indeed, consonates with the original sound, reproduces it, and this it is which is conveyed to the ear. Bronchophony is not, therefore, due to the better-conducting properties of the consolidated lung, but from the tube consonating with the larynx and its sounds above. I mention the theory because yon are sometimes asked to explain bronchophony on the theory of consonance. In whatever manner it may be caused, a much more important question is how are we to distinguish cavernous breathing from tubular breathing, and pectoriloquy from bronchophony. Now, I may as well tell you at once that some of the best authorities on auscultation deny the possibility of our doing so, and I am of this impression, because I have seen distinguished men and those who would not admit their incapability of diagnosing a cavity fall into the error named. The point is this—that a portion of lung containing a cavity is productive of the same sounds as a portion of consolidated lung with a moderate sized tube passing through it. In both there is a hollow sound during respiration, and in both the voice is directly transmitted to the ear during speaking. In most cases no difficulty exists in diagnosing the cause since we have other circumstances to guide us; for example, if a patient has had for a day or two all the other signs of pneumonia, and we find, on examining the lower lobe the physical signs just indicated we say he has bronchial breathing and broncophony, implying thereby a consolidation of lung. If, on the other hand, we have a patient long ill with all the symptoms of phthisis, and on examining the apex we meet with the same physical signs, we say he has cavernous breathing and pectoriloquy. The question remains—do these sounds, which depend on different causes, and to which we have given different designations, in any way differ in character? I think they do not, for if the accompanying circumstances before named are not present to assist us, but on the other hand, these circumstances are reversed, we are prone at once to fall into error; should our phthisical patient get a sudden consolidation of the upper lobe a cavity would be diagnosed, and at the lower part of the lung the before-mentioned physical signs would rarely be interpreted otherwise than by consolidation. Even if we are right in the diagnosis of a cavity in the apex, we are not sure whether it be one of a large

size or smaller one with hardened walls; the conducting-powers of the latter being equivalent to larger dimensions of the vomica. Thus it is that so much controversy has taken place respecting the healing and cicatrization of cavities in the lung; the observers never agreeing as to the positive existence of a cavity—since the physical signs would be much the same in the case of a consolidated apex with a tube passing through it.

I have dwelt longer on this subject than on any other, for in the whole range of auscultation it is by far the most important and difficult one to unravel.

Œgophony.—This is the sound produced by the passage of the voice through a thin layer of fluid; in the case of pleuritic effusion, lymph is thrown out, which may be of varied consistence and form a film over the lung; if under these circumstances the ear be placed over the affected spot and the patient made to speak, the voice vibrates in a very high key, and is thus called the goat's voice or "punch's voice." If there be other circumstances which convey the voice direct to the ear, as in hepatization of the lung, the peculiarity of sound is still more decided, and, thus it is that in pleuro-pneumonia, ægophony is best heard, and is then styled *bronchophonic ægophony*. Even in simple pleurisy the fluid may be sufficient to compress and to a certain extent densify the lung and thus tend to produce a broncho-phonic sound.

Cough.—Before we remove the ear from the chest, we often request the patient to cough, as we may learn much from the sound or the effort made to produce it. We might first observe that all those conditions which tend to carry the voice-sound more distinctly, would be operative in the same manner in the case of the cough, but the effects produced are useful in other ways, first to dislodge mucous and thus to allow air to pass into the lung or into the cavity. In the latter case we may sometimes place our ear over the cavity and though the patient breathes tolerably forcibly, yet we hear no sound, but immediately he coughs air is driven into the space, cavernous sounds are heard, or if fluid be present, gurgling also. In the case of large cavities it is absolutely essential that the patient should cough in order to drive air into the space and so produce the characteristic signs. If air be present in the chest, as in pneumo-thorax, and the patient coughs a metallic ringing sound is heard through the chest or *amphoric resonance* as it is called; if fluid be disturbed, drops of it fall down, and the sound produced is a high and metallic one, technically called *metallic tinkling*.

I might also mention here the remarkable metallic sound produced in these cases by artificially striking the chest instead of making the patient cough, although this method would more correctly come under the head "percussion." If you have a case of pneumo-thorax and lay your ear upon the chest and then another person place a coin on the surface and strike it, you will hear the sound reverberate through the chest like a deep-toned church bell. This was called by the French *bruit d'airain*.

If fluid and air be together in the chest, we have the case which is styled *pleuro-pneumo-thorax*, the fluid being in the most dependent part and the air above. The chest under these circumstances is like a vessel half-full of fluid; and, therefore, allows its contents to splash about in it if shaken. If the ear be placed on its surface and the patient shaken, a distinct splash can be heard as the fluid strikes the sides. This physical sign was known to Hippocrates and, therefore, this mode of physical examination is sometimes called "Hippocratic Succussion.

PHYSIOLOGY OF MOTION AND SENSATION

By Dr. PYE-SMITH.

(Continued from page 196, vol. iii.)

Lecture III.

The physical properties of living muscles are—(1) Transparency: this you have seen in the fresh muscle of the frog. (2) Elasticity: here is a sartorious still alive fastened at one end, and to a hook fixed at the other I hang these weights in succession. You see it stretches well, without breaking, and on removing them it resumes its former length and thickness. This muscle, from the same frog, which I have killed by throwing it into boiling water, scarcely stretches at all. During life each uncontracted muscle is slightly on the stretch, which obviously saves force when it contracts. (3) A slight electric current is found to pass from the surface to either cut end of a muscle, at all events when removed from the body.

Now, what takes place when a muscle contracts? In the first place it becomes shorter. At the same time, and to the same extent, it gains in thickness, so that there is no difference in bulk. Here is a glass vessel with a number of frogs' legs, connected by a wire with one pole of this battery. The electrode from the other pole dips into the water, which itself completes the circuit. On allowing a current to pass, you see the muscles are all thrown into contraction, but the level of the water (shown by this slender tube filled with blue liquid) does not alter. (Now, delicate observations show that there is a slight *loss* of bulk during contraction, probably from a little serum being squeezed out.) (2) The muscle becomes acid. Here is a fresh muscle which gives no reaction to this litmus paper. I pass an interrupted current through its nerves for a short time, thus keeping it in contraction, and now the test paper shows a pink discolouration. (3) Carbonic acid is liberated, which is normally carried off dissolved in the venous blood. (4) Heat is developed. We all know that exercise is a most efficient means of raising the temperature. (5) A slight noise is produced, which you may hear with a stethoscope over a contracting pectoralis, or in your own masseter.

What is the origin of this contracting power? The muscle is a machine for expending force. It can no more produce it than can a steam engine. The force is derived from that which maintains the chemical combinations of the elements which form our food, and especially those which make up the carbo-hydrates (starch, sugar, dextrin, &c.). These elements are brought by the blood as fuel to an engine, and with them the red discs carry oxygen. When the fibre contracts oxydation takes place, carbonic acid is formed, acids of the type of lactic acid are formed, heat is produced as in a furnace, acid chemical attraction is changed into a molecular motion, by which the two ends of the muscle are forcibly drawn together. At the same time, there is some wear and tear of the nitrogenous framework of the muscle, and this appears as creatine. Look back to this list of the principles found in the serum of muscle, and you will see whence they come.

As the contraction of the whole muscle depends on the shortening of each sarcous element, the larger the files of these, the greater will be the total effect, hence, you can

measure the *range* of any muscle by its length, *i.e.*, by the average length of its fibres, for they do not anastomose, but run undivided from one end to the other (of course the tendons must be excluded, and this especially needful, when, as in the vitus femoris, they run up further on on aspect than the other). Again, the *strength* of the contraction will depend on the number of fibres, which can be measured by the cross section of the muscle. What sort of movement will be produced by bringing the two ends nearer, is a purely mechanical problem, depending on the direction of their fibres (or the resultant of these) and the resistence of their attached points. In most cases, one is fixed (the origin) the other moveable (the insertion). In many either end may be fixed, and in a few only, both are moved at once. Other muscles again surround cavities, which they will obviously render smaller by their contraction. The special action of each muscle is a problem which can, in most cases, be determined easily enough as you dissect them.

Beside approximation of the two ends, contraction of a muscle will clearly press upon the blood-vessels it contains, and is thus an important help to the venous circulation in the limbs.

There is a peculiar kind of muscular contraction which you have occasion to see in patients affected with tetanns, traumatic, idiopathic, or produced by strychnia. We can imitate it by an "interrupted" current in a motor nerve. When I make this piece of the sciatic nerve complete, a galvanic circuit by including it between these two electrodes, you see that a contraction takes place when I "make" the circuit *i.e.*, when the current is admitted, and now, again, when I "break" it. The entrance or withdrawal of a continuous current, is a "stimulus" to a nerve just as pinching it is. But by using this other battery with a "magnetic interrupter," which makes and break the current as often as you hear the sounds which compose its buzzing, I keep the nerve in perpetual irritation. As fast as one motor impulse has produced a contraction another supervenes, and thus a "tonis" or apparently continuous spasm of the frog's legs is maintained. Here is a tracing I have taken with a lever moved by a muscle stimulated once by a "constant" current being sent through a segment of its motor nerve. You see a simple curve. Here is another with the muscle in a state of tetanus. You will see the line running on from the summit of the curve until it falls again with the exhaustion of the muscle. And here is a third in which the interruptions were made so slow that you can see how the apparently straight line was made up of a series of little curves, each representing a fresh "make" or "break." Or I may make the stimulus continuous by immersing the end of this sciatic nerve in a strong solution of salt; the muscles, you see, soon pass into a state of tetanus.

MEDICAL WARDS

—o—

Cases admitted from March 26 to April 8, 1874.

JOHN (Clinical).

3—Ascites
8—Cirrhosis and Diabetes
11—Broncho-preumonia
15—Aortic Aneurism
16—A gue

STEPH EN

8—Scorbu tus
9—Rheumatism
13—Hemiplegia
14—Uræmia (?)
30—Phthisis
36—Syphilis
43—Hæmoptysis
47—Phthisis
23—Chorea
25—Rheumatism
27—Rheumatism
33—Lo cal Peritonitis
39—Cyst near Kidney

MARY

1—Chorea
6—Dyspepsia
9—Partial Hemiplegia
12—Psoriasis
13—Turberculous Laryngitis and Phthisis
14—Dyspepsia

ASTLEY COOPER

1—Carcinoma of Rectum
6—Ulcer of Stomach—Hysteria
14—Bronchitis
18—Morbus Brightii
20—Morbus Cordis—Bruit Presystolic
22—Obstruction of Bowels—Cancerous Nodule (?)

PHILIP

8—Dropsy—Chronic on Acute Nephritis
10—General Eczema
40—Pyrexia—Cerebral (?)
48—Vertigo
38—Phthisis
6—Morbus Cordis—Aortic Diastolic Bruit—Emphysema
33—Softening of Brain (?)

ADDISON

10—Sclerosis

SURGICAL WARDS.

—o—

We are indebted to Mr. E. W. Butler for the following report of

A CASE OF NEUROTIC TEMPERAMENT AND MUSCULAR SPASM

under the care of Mr. Bryant.

J. S., æt. 20, was admitted into No. 24, Job Ward, on the 5th February, 1874.

Previous History—Mother is health; his father, soon

after marriage, and before the birth of any children, sustained an injury to his head by falling off a ladder, and has never been quite sane since; he is now in a lunatic asylum; no previous history of lunacy in the family; patient has brothers and sisters healthy. Patient had never had anything the matter with him till three months ago, when he began to walk lame, the lameness came on gradually and was attended by pain across upper part of thigh and along the course of the adductors; he, however, went on with his work till a fortnight ago, when he laid up at home, he had no right pain or starting in the limb.

On Admission—The head is a very ill-proportioned one, the forehead being contracted and narrow, more so than his face, so as to give the face an oval form; he has a fair memory, and can read for an hour or two without getting confused; the genitals are small as those of a boy of six or seven; bones look large, but he says he is only five feet four inches; his voice is boyish, body well nourished; as he lies in bed the left leg is adducted, spasm of the adductors being very evident in upper part of thigh, the leg also appears shorter, but this is only due to a tilting up of the pelvis on side, for when the right leg is crossed over the other the two anterior superior spinous processes are in the same straight line. No pain is felt when the heel is tapped. The two bones femur and ilium move together when he is told to bend the thigh, but they move separately to some extent when the surgeon tries to move them, there is no pain on the hardest pressure on trochanter. There is half-inch shortening.

[The interest of the case lies in this: that symptoms of disease of the hip-joint are associated with an ill-developed brain. A boy with a small head, and coming of a lunatic father, has become lame, and the muscles of his left hip are abnormally active, so that the femur is kept rigidly to the ilium, and the two bones move together when he walks. Yet he has not the least pain either in the hip or knee, and forcible pressure applied to the head of the bone, through the great trochanter, elicits not a wince or expression of discomfort. These facts surely negative the idea of any structural change in the joint, and suggests that the disease is one of that class which in a female would be called hysterical. Symptoms similar to those of hysterical joint affections occur sometimes in males, and it may be that the muscular spasm and small brain are in this case only accidentally associated. To dwell, however, upon the suggestiveness of the connection of the two conditions adds instruction to the case, and it is for this purpose that we publish it. "Give a dog a bad name" may well be applied to hysteria, even though we well recognise that it is an abnormal nerve state,—a neurotic condition, as it is called, and occurs, as does neuralgia, in those who have tendencies to insanity; there is such an intimate association of the ideas of "hysteria" and "shams," that the unreality of the latter but too often clouds our perceptions of the reality of the former. No such mental obfuscation is allowable in this case. The want of development is the prominent feature, the muscular spasm not so very obtrusive an accessory. How often is it that the opposite obtains, and the joint affection becomes the only thing evident, the hysteria needs to be hunted up, and in the presence or absence of all marked symptoms, so do we doubt as to the nature of the case. In connection with this boy many of our readers will no doubt call to mind another case, that has been under Mr. Bryant's care in Lydia for some time, where a girl with a history of aggravated hysteria, or hysterical mania, has had such extreme contraction of the muscle of the left lower extremity as to bring about a dislation of the leg and foot of such permanent nature, that in the case of the foot it seems doubtful whether it can be restored at all to its proper position. This dislation is certainly quite beyondt he control of the patient, either in its production or destitution.—Ed. *G. H. G.*]

Cases admitted from March 26 to April 8.

ACCIDENT

6—Concussion—Bleeding from Ear
6—Concussion
11—Fractured Ribs
12—Fractured Tibia and Fibula
14—Strangulated Inguinal Hernia
17—Injury to Abdomen
19—Punctured Wound in Thigh
24—Concussion
32—Fractured Fibula

CORNELIUS

1—Fractured Fibula
3—Lacerated Wound of Leg
4—Scalp Wound and Fractured Ribs
8—Slight Injury to Foot
12—Fractured Tibia and Fibula
13—Fracture of Left Thigh—Compound Simple Fracture of Right Tibia and Fibula
14—Fractured Tibia and Fibula
19—Injury to Back—Hæmaturia
20—Lacerated Wound of Foot

LYDIA

2—Hysterical Hip
2½-Ostitis Femur
5—Fractured Tibia and Fibula
6—Reducible Inguinal Hernia
7—Inflammation about Ankle-joint
8—Scalp Wound--Fractured Radius and Injury to Back
16—Extensive Burn
29—Mammary Abscess
22—Aneurism of lower Carotid Artery (?)
25—Stone in Bladder
26—Disease of Metacarpo-phalangeal Joint

MARTHA

2—Ulcer of the Leg
3—Old Disease of Knee-joint
4—Ulcer of Leg
6—Hip-joint Disease
8½-Disease of Knee-joint
13—Contracted Finger

NAAMAN

0—Ulcer of Rectum
10—Stricture of Urethra

LAZARUS

9—Bursa over outer Malleolus
13—Ulcer on Leg
15—Fistula in Ano
11—Papillary Growth on Leg
21—Ulcer on Leg

JOB.

2—Caries of Carpus
8—Necrosis of Fibula
4—Disease of Carpus
6—Epithelioma Tongue
8—Spinal Concussion
18—Epithelioma Tongue
20—Stricture of Urethra
21—Stricture of Urethra
24—Stone in Urethra

LUKE

1—Suppuration of Knee-joint
2—Nævus
3—Strangulated Scrotal Hernia
4—Stricture of Urethra
5—Hernia
6—Old Ulceration of Nose
7—Gummata on Shoulder
8—Kick on Abdomen
9—Stricture of Urethra
10—Disease of Knee-joint
11—Stricture of Urethra
12—Necrosis of Heel
13—Cancer of Testicle
14—Passive effusion into Knee-joint
15—Epithelioma of Rectum
17—Tumour of lower end of Femur—Ostitis (?)
19—Compound Fracture of Toes
21—Disease of Knee-joint

CHARITY

5.—Tumour (Back of Neck)
7.—Necrosis Scapula
10—Blood Tumour in Labium
11—Strangulated Femoral Hernia
12—Tumour in side—(Congential deformity of ribs ?)
13—Fracture of Tibia and Fibula
14—Fractured Thigh
15—Nævus on Face
17—Eularged Bursa under Seminembranous Muscle
17—Removal of Follicular tumour from Tongue
17—Compound Fracture of Pelvis—Ruptured Bladder
21—Fracture and Dislocation of Humerus
23—Syphilitic tumour on Lip

ROYAL COLLEGE OF SURGEONS.

The following Questions formed the written part of the primary examination at the College of Surgeons, on April 4th, 1874 :—

1. Describe the venous sinuses within the Cranium, and the course and relations of the great vessel which receives their blood on the right side from its commencement to its termination.

2. Mention the parts in contact with the Levator Ani Muscle.

3. Give the origin, course, distribution and relations of the Interosseous Nerves.

4. From what sourse does the Portal Vein receive its blood? Describe its distribution, and trace the blood onwards into the general circulation.

5. Describe the relations and form of the Popliteus Muscle, and mention in order in which they appear the parts which must be removed to expose it.

6. Explain the effect of complete division of the Spinal Cord immediately above the origin of the Phrenic Nerve.

The following Guy's men passed succcssfully :—

On the 7th—Mr. Waterhouse

On the 8th—Mr. Gathergood
Mr. Symonds

On the 9th—Mr. Reynolds
Mr. Bevan
Mr. Davies
Mr. Hunt
Mr. Champneys

On the 10th—Mr. G. Chadwick
Mr. T. R. Judson
Mr. John Mackern
Mr. George Miles
Mr. G. Mallam
Mr. C. F. Pickering

RECEIVED.—Treatise on Food and Dietetics, by F. W. Pavy, M.D., F.R.S.—The London Medical Record.

GUY'S HOSPITAL BIENNIAL FESTIVAL, 1874.—The DINNER will take place this year on TUESDAY, MAY 5, at Six o'clock, at WILLIS'S ROOMS, KING STREET, ST. JAMES'S. J. COOPER FORSTER, Esq., in the Chair. Past and present Students of Guy's Hospital desirous of having their names added to the list of Stewards are invited to communicate at once with the Honorary Secretary.

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Guy's Hospital Gazette.

VOL. IV.—NO. 2. SATURDAY, APRIL 18, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

LECTURES ON MEDICINE.

—o—

DISEASES OF THE RESPIRATORY ORGANS.

PHYSICAL EXAMINATION OF THE CHEST.

(Continued from page 3.)

PNEUMONIA.

In the whole history of medicine no disease has attracted so much attention as pneumonia. The acuteness, severity, and remarkable nature of the complaint have given to it this prominent position, and for these reasons, like the sacrificial frog, it has been made the subject of every experiment in therapeutics. It is still regarded as the typical affection in which we are to try all the new antiphlogistics, including digitalis, aconite, phosphorus, veratria, and a host of other remedies.

If you consider the remarkable nature of the complaint, you will almost anticipate me in your knowledge of what the symptoms and physical signs must be. Think for a moment of a spongy organ like the lung, destined to contain air, becoming in a few hours quite solid from the pouring out into its tissue of a pound or two of albuminous substance. You might know what a physical examination would show, and you would be prepared for the distress of breathing and high state of fever. Since, then, the symptoms depend so entirely upon this altered condition of the lung, it will be advisable to describe in the first place the anatomical changes which the organ undergoes during the process of inflammation. You will find that ordinary pneumonia involving a whole lung or a large part, is at the present day often styled "croupous," and this I will explain. You know that the lung tissue and the bronchial tubes are so anatomically and phyisologically different in the adult, that the inflammation of the two structures remains totally distinct, pneumonia being one thing and bronchitis another. In children, however, it is not unusual for a bronchitis to continue downwards into the lobules of the lungs, and so a pneumonia is set up which has a different origin from that in the adult, and is purely lobular in its character. This is sometimes met with in adults, but, if so, it is a chronic disease. We have, therefore, a *lobar pneumonia* and a *lobular broncho-pneumonia*. Now, it is said that the character of the inflammation is different in the two cases, in the same way as it differs often on the same mucous membrane, as for example, in the larynx and trachea where we meet with a croupous inflammation and a catrrhal inflammation; in the one case the surface is covered with a fibrinous membrane, and in the other with a corpuscular mucous secretion. Now, it is maintained that in ordinary lobular pneumonia, the inflammatory product partakes of the nature of the first, and in broncho-pneumonia, or lobular pneumonia, the inflammatory product resembles the second; the former has, therefore, been styled *croupous* pneumonia, and the latter *catarrhal* pneumonia. I explain all this because the terms are getting into use, but at present witholding my opinion as to the correctness of the statements with regard to the histological process,

Anatomical changes in lobar pneumonia.—It was long taught that inflammation of the lungs consists in the exudation of a lymph into the interstitial substance or parenchyma of the lungs, but of late years the doctrine which was always taught by Addison in this school, and who was the first to demonstrate the true nature of pneumonia, is now universally adopted. It is that the air-vesicles or the alveoli

constituting the dilated termination of the bronchi which contain the inflammatory products. Addison was led to his conclusion forty years ago by actual observations as to the seat of the exudation by the structure of the pulmonary cells and by the proved absence of any supposed intercellular spaces into which lymph could be effused.

The changes which take place in the lungs are of the same kind which are witnessed in other structures, viz., first, an intense hyperæmia followed by a fluid and solid exudation. The change, therefore, which the organ undergoes is a most striking one, being none other than the conversion of a light spongy organ normally full of air into a heavy solid mass, and all within the space of a few hours. The different stages of the process are sufficiently well marked, and are traceable during life by various physical signs which accord exactly with the condition of the lung. They resemble what is seen in other structures during inflammation, viz., hyperæmia and vascular engorgement followed by an exudation.

The first marked change observable in the lung after death is that of *engorgement with serous exudation*, and this is usually called the first stage of pneumonia. On taking the organ out of the chest it is found to be more bulky and heavy than the healthy lung; it pits on pressure, and when cut through it is much redder from sanguineous engorgement, and a quantity of serum pours from it; owing to the lung still containing air the serum is frothy, and portions of tissue still float when cut off and thrown into water; if now the finger be forced into the lung it will be found to be readily lacerable, and this is a means of distinguishing it from simple œdema or dropsy of the lung. This softening is one of the best signs of inflammation, and it further shows that the fibrous tissue which forms the walls of the pulmonary air-vesicles is more or less involved in the inflammatory change for although we give up the old theory of an interstitial inflammation, yet we must hold that, in connection with the cell-formation which takes place, the texture of the lung is loosened by an exudation into its meshes, in the same way as in inflammation of other structures; as, for example, of the peritoneum, where it may be observed that, although the exudation takes place from the surface of the serous membrane, yet the coats of the intestine are infiltrated with lymph, and are readily separable from one another. It is during this stage of serous exudation in the lung that fine crepitation is heard by the ear.

It is not unusual until the lung has reached this stage in the inflammatory process that inflammation is recognisable during life, and it is rare for it to be seen earlier on the post-mortem table. Yet exceptionally this is the case, and it must be evident that prior to the exudation of any fluid there is a stage of simple engorgement. The air-vesicles would be encroached upon by the distended blood-vessels causing a harsh and deficient breath-sound. This early condition has been recognised by Stokes, and confirmed by Addison, so that it would more justly be styled the first stage of pneumonia, and that to which this name is given would than constitute the second stage. We shall adhere, however, to the usual nomenclature.

The second stage of pneumonia, that of red hepatization.—As in the course of inflammatory effusions in other parts of the body the serous exudation at first poured out becomes more solid, so the same occurs in the lungs, the serum makes way for lymph, until the air-cells become completely blocked by it. The lung at this time when cut through no longer exudes serum, but a solid matter squeezed from the cells; the blood-vessels, however, are still gorged with blood, which is in part stagnant within them; at the same time the secretion which has been poured out contains some blood-globules and hæmatine, and thus the organ still retains its red colour, though not so bright as in the healthy state. This dull red solid lung resembles, under these circumstances, a piece of liver, and thus the term hepatization has been given to it. On examining the cut surface it is seen to be slightly granular from the projection of the distended air-vesicles; it no longer emits any fluid or air on pressure, but rapidly sinks in water. It is also very lacerable when the finger is thrust into it.

The third stage, that of grey hepatization.—This is a further development of the previous stage by a more complete solidification. The air-vesicles are more tightly filled with inflammatory matter, the cut surface is still granular, sinking in water and easily lacerable; but the exudation contains less colouring matter, and the blood has been squeezed out of the capillaries, and thus the whole colour of the lung is paler. The grey colour, indeed, which the lung presents is due mainly to the natural pigment which it contains, and thus it happens that a hepatized lung is much darker in aged persons, where more natural pigment exists, than in children, where pigment is almost deficient; it follows that the hepatized lung of children is white or yellowish-white. The nature of hepatized lung can be readily understood if you can suppose the minute bronchial twigs and air-cells tightly filled with albuminous material, and, indeed, it very much resembles the preparations in our museum where the organ is injected with tallow. When a lung is solidified or hepatized in the manner spoken of, it is seen filling the chest when the body is opened, instead of collapsing as a healthy lung should do; it forms, indeed, a mould of the thorax, and when removed the form of the ribs may be seen impressed upon it. Not uncommonly a slight pleurisy has accompanied the pneumonia, and then a delicate layer of lymph may be found on the surface of the lung and easily separable from it. A lesser amount of pleurisy is very commonly present where the membrane is seen to be opaque whitish, or lost its lustre. This is so common that it is only when a considerable amonnt of lymph has exuded from the surface, that the name pleuro-pneumonia is applicable. In comparing the solidified with the healthy lung, it will be found that in some cases as much as three pounds of solid matter must have been rapidly exuded into the tissue. During life, in the second stage of pneumonia, there is an absence of all natural breath-sound, but in its place there is bronchial breathing and bronchophony with dulness on percussion.

PHYSIOLOGY OF MOTION AND SENSATION.

By Dr. PYE-SMITH.

(Continued from page 4.)

Lecture IV.

After death the muscles become stiff. This contraction is known as rigor mortis. The fibres lose their irritability,

their transparency, and their elasticity; and the contents of the sarcolemma become solid (*i.e.*, the myosin coagulates). At the same time heat is developed, so that occasionally the temperature may rise, carbonic acid liberated, and the reaction becomes acid, as in normal contraction. This process is hastened by warmth, and by previous exercise; hence it occurs rapidly in hunted animals. It comes on slowly and remains long in robust men, who are suddenly killed, and comes on and passes off again quickly after deaths from lingering diseases, and especially putrid fevers, in some cases being so evanescent as to escape notice. Rigor mortis marks the end of the life of the muscle, which thus survives that of the individual for a variable period, and the relaxation which ends it is due to decomposition destroying the myosin.

Unstriated muscle differs, as you know, in many points of structure from the striped variety. Its physiology, though not so thoroughly investigated, appears to be almost identical. Its chemical composition, and physical properties, the phenomena of its contraction and its post-mortem rigidity are essentially the same. The chief difference is the slowness of its contraction. Thus, if this represents the mark made on a revolving drum or other moving surface by a lever connected with a striated muscle when its nerve is irritated, we have first a pause (the "latent period") like that between touching the trigger and the explosion of a fowling-piece, then a rapid rise, a short culmination and a rapid descent. A curve produced in a same way by unstriated muscle will have a long latent period, a gradual rise, a long maximum, and then a gradual fall.

Nerves consist of a bundle of fibres, united together by connective tissue and blood-vessels. The outer fibrous sheath (often, but inconveniently, called the neurilemma), with its septa, contains a good deal of elastic tissue, which gives a nerve its remarkable tenacity. The finer connective tissue which binds the fibres into fasciculi is called the *perineurium*, answering to the perimysium of a muscular fasiculus. The ultimate nerve fibres are cylinders of a varying size, but never so large as muscle fibres, and on an average about the diameter of a white blood corpuscle ($\frac{1}{2500}$ inch). They consist of (1) a transparent, structureless membrane, answering to the sarcolemma; it was named the "primitive sheath" by Schwann, but may be more conveniently called the *neurilemma;* (2) an opaque fluid substance filling this tube called the *myelin*, medulla, or white substance of Schwann; and (3) a solid rod, running through the centre of the fibre, and known as the *axis*, or axis-cylinder. You might imitate a nerve by putting a wire through a thin glass tube, filling it up with melted paraffin, binding a dozen of these together with cotton wool, and these bundles into larger ones with tow. The myelin coagulates immediately after death, and may be seen running out from the cut end of a fibre, or extravasated in drops; it often is squeezed so as to produce a varicose appearance of the fibre. It refracts light strongly, and gives a dark, wavy, inner line to the faint outline of the neurilemma. Hence these fibres are called white, medullated, or double-contoured. Other fibres are also found in nerves which are much smaller, and have no myelin: being thus more transparent to transmitted light, they are grey instead of white when seen by reflected light, and are known as grey, gelatinous, or non-medullated nerve fibres. They are present in small numbers in most nerves, but are very numerous in some, especially the sympathetic, so that they impart to it their grey, translucent appearance.

Each fibre is separate and continuous from the centre to the periphery, but usually divides just before its distal end. Its function is to conduct impressions from the surface to the centres (*afferent* fibres), or from the centre outwards (*efferent*), or from one centre to another (intercentral or *commisural*). One end is always connected with a ganglion cell, the other with a second corpuscle, or with an "end-organ." The conducting part is the axis, the myelin, &c., round it apparently answering the purpose of insulation, like guttapercha round a telegraph wire. The conductivity of nerve, like the contractability of muscle, is a property which is manifested in obedience to certain stimuli. There are, as we have already seen in motor nerves, (1) mechanical irritation, (2) heat, (3) chemical irritation, (4) an electric current breaking into or leaving it, and (5) an impression from a ganglion-cell or an end-organ. The first four stimuli are the same as those which excite a muscular fibre to contract, the last is the proper physiological stimulus, and answers to the nerve-current, which is the peculiar and normal excitant of a muscular fibre.

The nerve current transmitted from the seat of irritation is a progressive molecular change, which may be compared to that in a row of ivory balls in contact, when the first is struck; or to the progress of combustion along a train of gunpowder, or of heat through a metal red. Perhaps its closest likeness is to a constant electric current along a conducting wire; but that the two forces are not identical is proved by this experiment. Here is a frog's leg with the nerve dissected out. I touch it with a pair of electrodes, and you see the leg moves; and now it moves again, when I break the circuit by taking them off. Now I tie this thread tightly round the nerve so as to crush its fibres. Applying the electrodes above the ligature gives rise, you see, to no contraction; for the nervous current produced cannot pass the "block." But now I place one electrode on each side of the ligature, and the leg moves again; for nerve, whether whole or not, conducts an electric current like other animal textures, and when the circuit is made or broken, the shock produced at the electrode below the ligature, sends a nervous current down to the muscle.

While a constant electric current is passing down a nerve though it produces, as you now know, no nerve current, yet it alters the condition of the nerve in this curious way: that the part of it near the positive electrode (anode) is less susceptible to a stimulus (such as pinching), while that near the negative electrode (cattrode) is more so. This condition is called *electrotonus* by its discoverer, Dubois Reymond.

The rapidity with which a nervous impulse travels has been measured. In a frog the current passes down a motor nerve at the rate of about 31 yards a second; in man it is rather quicker, while a sensitive nerve in man transmits an impression at the rate of 60 yards a second. Thus nervous force travels slower than electricity, light, sound, or than a rifle bullet.

What physical or chemical changes take place during the passage of a nerve current are almost entirely unknown; we only recognise it by its effects.

The *Kölnische Zeitung* states that transfusion of blood has been practised recently in Dresden in no less than seventeen cases, and always successfully.

A TREATISE ON FOOD AND DIETETICS.*

There is hardly any more important subject among the many with which the medical profession are necessarily somewhat familiar, than the physiological and therapeutical action of the varieties of food and drink. It is only when one has to face the full responsibilities of the treatment of disease apart from hospital practice that the difficulties which surround the subject are fully felt.

And yet of what importance to the community is this question of food? Over-indulgence in the luxuries of the table have changed the fate of nations; defective or mistaken ideas concerning supplies have generated diseases which have decimated armies, and rendered powerless the grandest fleets that ever sailed. We have not to look into history alone for dietetic mistakes. "Half the unhappiness in the world proceeds from little stoppages, from a duct choked, from food pressing in the wrong place, from a vexed duodenum, or an agitated pylorus." And we may add, that we, as a profession, derive no little nourishment therefrom. How many of Adam's sons, oblivious of the advice given to their first parent, have had cause to mourn.

> "If thou well observe
> The rule of not too much, by temperance taught
> In what thou eat'st and drink'st, seeking from thence
> Due nourishment, not gluttonous delight,
> Till many years over thy head returns;
> So may'st thou live till like ripe fruit thou drop
> Into thy mother's lap, or be with ease
> Gathered, not harshly plucked, for death mature."

How many times have portly dimensions and yellow conjunctivas in our patients suggested Falstaff's habits of "but one half-penny worth of bread to all this intolerable deal of sack."

But apart from these questions, perhaps more social than medical, we are constantly being consulted, "What shall I eat or drink?" And this often is a far more difficult question to answer and one possibly of greater importance to our patient than whether we shall prescribe "gentian or ginger." One cannot evade the difficulty by ordering "low diet," or "middle diet," with a misty notion of twelve ounces of bread and half-pint of tea. Our patients will demand from us whether they are to drink hock or claret, porter or ale, or eat fish, flesh, or fowl. They will probably tell us that another doctor has told them that they may drink sherry, but on no account port; may have a little porter, but no ale; they may have mutton, but that beef is poison. And we shall sigh for an inspiration and wonder on what mysterious principles our rival works.

Furnishing an answer to these difficult questions, based on scientific principles and a large experience, is the volume before us, "Food and Dietetics, physiologically and therapeutically considered." No one who glances over the pages of this volume and the other works, the produce of Dr. Pavy's pen, will accuse him of want of industry or zeal as a scientific worker in his profession. As physician and investigator he has attained a position from which he is entitled to speak on dietetics with undoubted authority. He has collected from foreign authors a vast amount of information on the subject in question, in addition to his own experience, and has presented it in a convenient and readable form. From it the busy practitioner can draw the best information for his daily needs, and the student will find ample material to guide him in his future career.

Commencing with the nitrogenous alimentary principles, their value as flesh-formers are discussed. The physiology of digestion and the various offices fulfilled by the gastric, intestinal, and pancreatic juices, and bile, are carefully described. The celebrated experiments of Fick and Wislecenus, and also those of Dr. Parkes upon the force-production of nitrogenous and non-nitrogenous food, in relation to the excretion of area are discussed. Dr. Pavy sums up, "Looking then at the evidence adduced, the result of modern research goes to show that the non-nitrogenous alementary principles are applied, not only to the production of heat, but likewise other forms of force. It may be considered that nitrogenous matter which constitutes the basis of the various organs and textures forms the the instrument of action, whilst the oxidation of non-nitrogenous matter supplies the the motive power." We should think the position here taken is in accordance with all modern physiological teaching, and hardly needs now to be strongly enforced.

The consideration of the assimilation and utilization of the carbo-hydrates brings up the old debated question of the glycogenic functions of the liver. Dr. Pavy insists, with great show of reason, we think, that sugar undergoes no change in the general circulation, and, therefore, is of no use in the system from its tendency as a crystalloid to run off by the kidneys as shown by injecting even very small quantities into the jugular vein. That when absorbed from the intestinal tract it is stored as amyloid substance in the hepatic cells to re-enter the system, not as sugar, but as fat, and possibly to assist in the formation of white blood corpuscles.

The alimentary substances, such as meat, game, fish, fowl, receive their due share of attention, and oysters are not forgotten.

The composition, value and adulterations of milk, butter, and cheese are fully discussed, and several chapters are devoted to the vegetable alimentary substances, including the cereals, vegetables, and fruits.

The non-alcoholic beverages next engage attention. Tea is spoken of with respect, which will win the hearts of the elderly portion of the female community. "It cools the body when hot, probably by promoting the action of the skin, and warms it when cold by virtue, it would seem, of the warm liquid consumed." The effects of alcohol on the system are discussed, but in the present unsatisfactory state of opinion regarding its physiological action, little can be said with certainty on the subject. Useful hints are thrown out concerning the wines and spirits most likely to be of service in the treatment of disease.

But the pages we turn to with the greatest interest are those devoted to therapeutical dietetics. Here we must confess to a little feeling of disappointment, not that the matter is not good, for, as far as it goes, it is undoubtedly sound, but, we think, it does not go far enough. The diet for the fat, the lean, the gouty, the dyspeptic are disposed of in as many pages, and we cannot but regret that while pages are devoted to Fresenius' analyses of the fruits, and the amounts of "pectous substances," "albuminous substances," "ash," &c., &c., worked out to three places of decimals in "large red," "small red," "middle-sized yellow," and "large smooth red" gooseberries, Dr. Pavy should not have more largely availed himself of his extensive experience

* A Treatise on Food and Dietetics, Therapeutically and Physically Considered. By F. W. Pavy, M.D., F.R.S. Churchill and Sons, 8vo.

in the dietetic treatment of disease. We hope, too, that in a subsequent edition, he will omit the old chemical formulæ, for we cannot understand who now-a-days is enlightened by both formulæ being given.

Finally, we believe Dr. Pavy has done real service to the profession by placing in the hands of the practitioner a really practical book, expressed in elegant language, and crowded with information, based on rational and scientific principles on the important subject of the physiology and therapeutics of food.

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What part of the Kidney do you see ? How do you know it to be cortical portion ? What is a Malpighian body ? How is the capsule formed ? Of what are the pyramids composed ? Where do they open ? How many are there ?

Stomach and Duodenun (Laid Open), with Pancreas and Bile Duct.

Tell me what you see there ? How do you know that is duodenum ? How far round do the folds of the valvulæ conniventes extend ? How are they formed ? What are the glands met with in the duodenum ? What is the structure of a villus ? What its uses ? What is chyle ? Where does the bile duct open ? What is bile ? What are the functions of the liver ? What are the rises of bile ? Where else do you find cholesterine ? What becomes of the chyle ? Where is the receptaculum of chyle situated ? Trace the course of the thoracic duct. Give me a description of the stomach, its structure, and arrangement of muscular fibres. What change does the food undergo in the stomach ? How much gastric juice is secreted in twenty-four hours ? From whence does the stomach derive its blood supply ? What is the structure of the spinal cord, and what its functions ? Where is the grey matter most abundant, and where the white ? On which roots are the ganglia situated ? How would you prove the anterior roots are motor, and the posterior sensory ? Is the cerebro-spinal system connected with the sympathetic, and how ? Where do the splanchnic nerves come from ? What becomes of them ? How do they pass from the thorax to the abdomen? How do you know that is the upper surface of the diaphragm ? What are its openings, and what pass through them ?

Side of Face and Pterygo-Maxillary Region.

What is connected with the nerve to the internal pterygoid ? From whence does the otic ganglion get its sensory motor and sympathetic roots ? What does it supply ? Has it any communication with the facial nerve ? What is the position, and what are its relations ? Where would you look for the nerve to the masseter muscle ? Is the buccal nerve from the 3rd division of the 5th sensory or motor ?

Gluteal Region.

What do you see on removing the gluteus maximus ? What named branches do you know of the sciatic artery ? What becomes of the coccygeal branch ? Does the nerve which supplies the gluteus maximus terminate in that muscle ? Where does the superior gluteal nerve come from, and what does it supply ? Does it pass out above or below the pyriformis ?

Vertical Section through Trachea.

With a bit of blue thread, marking the middle line and showing the septum of the bronchi to be a little to the left. What is that ? Which is the right bronchuo ? If any foreign body got into the trachea, into which bronchus would it fall, and why ? What are the muscles which act upon the rima glottidis ? Explain their action. From whence do they get their nervous supply ? Give the boundaries of the pharynx. What are the origins of the constrictor muscles ? How are they related to one another ? What are the muscles attached to the styloid process ? Can you see the stylo-pharyngeus muscle if you look in a man's mouth ? What are the relations of this muscle ? What musele runs parallel with the Eustachian tube ? What is the origin of the palato-pharyngeus, and by what muscles are its two heads separated ? Explain the actions of the muscles of the soft palati during deglutition ? From whence do they get their nervous supply ? How would you proceed to expose the pharynx from the back ?

Point out all you see in this side view of the pelvis. What is the structure of the prostate gland ? Where do its ducts open, and how many are there ? Where is the membranous portion of the urethra ? What is the structure of Cowper's glands ? Where do the ducts open, and how long are they ? Is that a right or left testicle, and how would you tell it ? Explain the structure of the testicle. Where do the hypogastric arteries come from ? What kind of blood do they contain ? Describe fœtal circulation. How is the blood of the fœtus enriched and purified in the placenta ? What changes take place in the vascular system at birth ? Should you say that child had had a separate existence from its mother, and on what would you found your opinion ?

What are the openings into the right auricle ? Where is the opening of the coronary sinus ? Explain the sounds of the heart. What events correspond with the first and second sounds. Which contract the quicker—auricles or ventricles ? What relations do the capacities of the auricles and ventricles bear to each other in the fœtus and adult ?

What is the composition of the blood ? What are its uses ? How much does the body contain ? What is there peculiar about the subscapularis muscle ? What sort of a muscle is the flexor carpi ulnaris ? What are the origins and insertions of the muscles of the thumb ? What are sesamoid bones ? Where do yon find them ?

Shown the Medulla Oblongata. What is it ? Is it in the cranium ? What lies between it and basilar process of occipital bone ?

The following Guy's men passed :—

On the 13th—Mr. Roberts
Mr. Evans
Mr. Duke

MEDICAL WARIS

—o—

Cases admitted from April 9 to April 15,

ASTLEY COOPER

17—Hæmatemesis

MIRIAM (Clinical).

26—Heart Disease
27—Bronchitis

JOHN (Clinical).

1—Tuberculous Disease of Abdomen
2—Phthisis
4—Pleurisy
6—Hemiplegia
11—Cervical Chorea

STEPHEN

6—Bright's Disease
17—Heart Disease
18—Bronchitis

PHILIP

15—Pleuritic Effusion
17—Pleuritic Effusion—Tapping with Aspirator
25—Mitral Pleuritic Effusion—Left Base
28—Broncho-pneumonia—Incipient Phthisis
31—Gonorrhœal Rheumatism
42—(Obscure) Abscess in left Lumbar region (?)
43—Lead Poisoning—Chronic Gout (?)
47—Cerebral—Sunstroke—Ague (?)

ADDISON

2—Cancer of Liver
9—Phthisis
11—Paraplegia
12—Acites—Cirrhosis
13—Psoriasis
15—Phthisis
24—Phthisis
27—Hysterical Paraplegia
31—Ague (?)
32—Bright's Disease
37—General Degeneration
40—Phthisis
42—Rheumatism
44—Hemiplegia
45—Syphilis
47—Phthisis

MARY

8—Hydatid of Liver
15—Psoriasis
24—Bronchitis

SURGICAL WARDS.

—o—

Cases admitted from April 9 to April 15, 1874.

CORNELIUS

2—Fractured Thigh
3—Lacerated Wound of Neck—Internal Jugular partly divided
19—Run Over—uninjured

ACCIDENT

4—Scalp Wound—Concussion
14—Scalp Wound—Concussion
15—Fractured Tibia and Fibula
17—Fractured Tibia and Fibula
22—Compound Fracture of Two Fingers—Amputation

LYDIA

13—Sinus in Thigh

MARTHA

16—Recurrent Carcinoma—After excision of Breast

NAAMAN

2—Necrosis—After Amputation of Leg
4—Necrosis Fibula
6—Necrosis of Radius of Ulna
7—Disease of Tarsal Joints
8—Recurrent growth in Nose
9—Epitheliomaof Neck
11—Extravasation of Urine—Perinæal Section
16—Urinary Fistulæ

LAZARUS

11—Stricture of Urethra—Cystitis
15—Hydrocele

JOB.

18—Epithelioma of Tongue
19—Fractured Jaw
20—Ununited Fracture of Humerus

LUKE

7—Aneurismal Dilatation of Brachial Artery
9—Hæmorrhoids
15—Hare Lip
16—Abscess in Buttock

DORCAS

7—Fractured Tibia
9—Fractured Fibula
10—Run Over ?—Abdominal Injury

CHARITY

6—Syphilitic Sore Throat
7—Adenoma of Breast
15—Gummata below Knee
17—Hysterical Knee
25—Disease of Hip Joint

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Preservation of Food
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Guy's Hospital Gazette.

VOL. IV.—NO. 3. SATURDAY, APRIL 25, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

DURING the past week the final examinations for the Membership of the College of Surgeons have been taking place, and with what general result it is very difficult at present to state; we shall, however, be able shortly to lay before our readers an analysis of the pass list, with the comparison of the number of men passed by the different medical schools in London. We would not attempt to hint at present what relative position our hospital will take in the list. We have, however, been made sufficiently acquainted with the result of the examination to know—and we feel it our duty to assert—that Guy's men were not so well up in their work as they ought to have been; there is evidently a screw loose somewhere, and we feel justified in asserting that if it were not for extramural assistance the effects of that loose screw would be doubly felt by all those presenting themselves for the final examination at the College.

In passing, the question has suggested itself to our minds—which is the more searching examination, the primary or the final? Again—for which examination is there the greater effort in preparing the men?

We will reserve the consideration of these questions for some future period, and turn to the more apparent deficiency.

As soon as ever men have passed their primary anatomical and physiological examination their great tendency is to fling aside all idea of further study of those subjects, there is a prevalent idea amongst them that they have been found competent in both subjects, and no more of these will be required of them; but that is wrong, very decidedly wrong. If one just thinks for a moment what a test it is of a man's anatomical knowledge, ligaturing various arteries, excising joints, operating for stone, and the like, where would a man be without his Anatomy? Then with reference to Physiology, we would say that unless a man has a thoroughly sound knowledge of that subject he can never by any means be familiar with any of the pathological processes which one is constantly called upon to explain. We need say but little to bring this remark home to those who have not yet studied Pathology. Just one question. How can a man, unless he be thoroughly acquainted with the normal development, structure and function of an organ tell of the abnormality in development, structure and function of that organ? One is merely the histology and physiology of normalities, the other the histology and physiology of abnormalities, the intimate relation is so apparent that we will say no more in proof of it. We would urge those men who have just passed, or are about to pass their primary examination, to keep up their anatomy and physiology, and increase their knowledge in those subjects, or at all events avoid carefully any retogressive movement. Much has been said of the study of microscopic anatomy during the second winter session at the hospital, by some it is said to be worse than useless, but we would certainly not expect a man to know, or even pretend to know, anything of his pathology without first of all knowing his histology, not merely from reading but from practical work. Who ever would be able to recognise morbid structures under the microscope if they had not previously learned to recognise, without difficulty, or hesitation the healthy and natural arrangements of the tissues? A man might study his histology from books for life, and yet if he were given an original specimen under the microscope he would find a considerable difference between it and his diagrams, and very probably fail to recognise it. Our space will not allow us to dwell further on these subjects at present, we would only suggest that one reason we can at present see for the unsatisfactory result of the present examination is, that men have failed to keep up a fair knowledge of those subjects which occupied solely their attention during their first and second winter sessions. In another column will be found the names of those who have passed, with the paper, and also a few of the *viva voce* questions that have been given. We hope sincerely that in comparison with other schools, the result of the examination may be satisfactory to Guy's, but be the comparative status as it may, good or bad, we have not seen so brilliant a result as ought always to attend those who have availed themselves of all the priviledges accorded them as Guy's men.

LECTURES ON MEDICINE.

—o—

DISEASES OF THE RESPIRATORY ORGANS.

By Dr WILRS.

(Continued from page 10.)

PNEUMONIA (Continued).

Now, a few words as to the minuter changes which are going on in the lung. These are probably of the same kind which are in progress during the course of inflammation elsewhere. Before microscopic times, pneumonia was regarded as an exudation of lymph into a supposed parenchyma of the lung, but when the organic nature of an inflammatory product was discovered the theory of Schwann was applied, and it was taught that the cells sprang up in a cytoblastema, poured out from the congested blood vessels. Afterwards came Virchow's theory, which was also made applicable to the lungs, and so pneumonia was nothing more than a proliferation of the endothelial cells of the alveoli. More lately, since Cohnheim's views have come into vogue, it may be supposed that a part of the new exudative material may be formed from the migrated white cells of the blood. Whatever view we take, the blood vessels are gorged, red corpuscles escape, or break up, rendering the secretion red. In later stages of pneumonia, the fibrous walls of the aveoli contain an exudation of cells, and these may, in all likelihood, have had their origin in the fibres themselves.

The stage of purulent infiltration.—According to the view which may be taken of this condition it may be regarded either as a sequel to the forms of inflammation just described or as a true fourth stage of pneumonia; indeed, if the hyperæmic state be regarded as a recognisable condition, the purulent infiltration would constitute a fifth stage. It is better, however, to be content with the three which are usually adopted. With the third stage, or that of grey hepatization, the inflammation has reached its height, and the attendant fever is departing; resolution takes place, the exuded lymph undergoes disintegration, the cells become granular and fatty, and thus the inflammatory products are removed by absorption or expectoration. Sometimes a simple absorption takes place, and the exuded matter may be taken up as rapidly as it was thrown out; this is certain from the frequent absence of expectoration and the return of the diseased lung to its healthy state. More frequently the secretion is thrown up, and the sudsidence of the inflammation is shown by the change of the rusty viscid mucus to a thin and yellowish one. It is during this period, when the exudation is softening and passing into the tubes, that pneumonia is usually fatal, and it is frequently observed that the sputum instead of becoming lighter in colour has become purple or black. When a post-mortem examination is made and the lung said to be in a state of purulent infiltration, it is found not to have lost its solidity, for it will still sink in water, but when cut through, instead of being dry, it exudes a dirty coloured fluid of a greenish-brown colour mixed with air. It is the hepatized lung softening and saturated with the fluid products; the exudation-cells are granular and broken up, and the alveolar walls full of the same material. Considering that in fatal cases of pneumonia this is the condition found, the stage of purulent infiltration has been regarded by some as a necessarily fatal one: that instead of a simple disintegration of the cellular exudation a further infiltration takes place into the alveolar walls, a loss of elasticity and actual softening follows with an impossibility of recovery. Yet there are those who, with Hughes Bennett, regard a change resembling this as a necessary termination of an inflammatory process, and, therefore, a purulent stage of pneumonia as an all but necessary one. Of course he would not imply, nor is it implied, that in the fatal form the term purulent is equivalent to the word suppurating; it signifies merely that the inflammatory cell or leucocyte becomes granular and fatty, and, as some would further say, a pus-cell, but it does not mean that anything like purulent matter is seen in bulk or that abscesses are ever formed. Suppuration, in the ordinary sense of the word, does not take place as one of the stages of inflammation of the lungs. If an abscess is found in the lung the inflammation has not been of the ordinary or croupous variety, but it has been lobular and pyæmic.

It is a point of great interest to ascertain when the recoverable stage of pneumonia has passed and the fatal one begun. It may be true that the disintegration of the material is necessary, and thus theoretically a purulent stage must exist, but as a matter of fact, numerous rales throughout the chest are regarded as unfavourable during the recovery from pneumonia, whilst the most favourable cases are those where absorption quickly takes place without any moist sounds. These are the reasons against thinking that the purulent infiltration usually found in fatal pneumonia is a stage which is reached in cases which recover; the probabilities are in favour of the hepatization in most cases not even progressing much beyond the red stage.

Symptoms.—Pneumonia commences generally with the symptoms of a common cold, but which rapidly develope into those of a high fever; there is shivering in the first instance followed by a quick throbbing pulse, furred tongue, hot skin, loss of appetite, headache, delirium, sometimes pain in the side and considerable oppression of breathing. The face is flushed, eyes bright, a cough soon to be followed by a characteristic expectoration of a rusty colour. At this time the fine crepitation is to be heard on applying the ear to the chest. After a few hours this makes away for tubular respiration and bronchophony, whilst the chest is dull on percussion.

I will now speak of these symptoms more in detail. First you will observe that the fever sets in with great violence, and if there be sickness, shivering and pains in the limbs you may suspect the onset of an exanthem. The *shivering* is often very marked, more so than in any other disorder, excepting ague and suppurative processes. The *tongue* almost from the beginning is covered with a thick creamy fur; the pulse is quick and strong, 100-120. The skin intensely hot, so that the term *pungent heat* has been applied to it. It was formerly supposed that the temperature was higher in pneumonia than in any other febrile disorder, but since the thermometer has come into use it has been found not to exceed, as a rule, 104°. The sensation, therefore, given to the hand of excessive heat must be due to the dryness of the skin or other causes. I said the face is flushed and the eyes bright, and that the *physiognomy* of

the patient as important; it is often sufficiently marked for you to say at once that the case is one of pneumonia, for whereas in typhoid the patient would look dull and heavy, with a lack lustre eye, the patient with pneumonia would have a flush on the cheeks and the eyes would be injected, bright and prominent. It is not unusual, also, to see an herpetic eruption on the upper lip. Having now seen the expression, observed the high state of fever, and the oppression of breathing, you examine the chest.

The lower part of the lung on one side, is the most usual place where you would hear fine *crepitation*; this is the fine continuous sound like the rubbing of a lock of air between the fingers, which I have already described. You will remark that the inflammation rarely affects a whole lung simultaneously, but that one portion is first attacked, and then the pneumonic process runs through the lung from base to apex, or apex to base. You next note the character of the *expectoration*, remembering it is by no means an uncommon circumstance for expectoration to be altogether wanting. When present the sputum is rusty and viscid. You will observe the physician, in going round the wards, taking up the spitting pot, and inverting it in order to see if the sputum will run out; if it does not fall out it is the viscid expectoration of pneumonia; a homogeneous secretion always comes from the alveoli of the lungs, and thus contrasts with the frothy mucus of the bronchial tubes. The secretion is also rusty; this means that it is intimately mixed up with the colouring matter of the blood: and is another proof that the inflammatory product has emanated from the intimate structure of the organ. In inflammation you know there is stasis of blood in the vessels, and very often blood escapes and mixes with the secretion; that is, some red globules have accompanied their fellow white ones in wandering through the walls. If there is no actual blood some disintegration of the blood corpuscles has taken place, and the hæmatine becomes incorporated with the secretion. You see the same thing in the smoky urine of nephritis. This rusty expectoration and fine crepitation may be regarded as diagnostic, or, as we say, pathognomonic of pneumonia. I said there was sometimes pain in the side. I am inclined to follow the teaching of Addison in this matter, and say that in simple pneumonia there is no actual pain, but if present it indicates the co-existence of pleurisy; I do not allude to that very slight affection of the pleura, covering the inflamed lung, which is almost always present, but a distinct costal pleurisy. There can be no doubt that a very acute pain in the chest pleurisy must certainly be present, and it is equally certain that pneumonia constantly occurs without pain, therefore in all probability the proposition is true—that pain of any severity means that pleurisy complicates pneumonia.

After a short time, that is, in a day or two, you will find the physical signs in the chest are much altered, the crepitation has disappeared, and no sound is heard at all in the tissue of the lung, but only the air passing in and out of the bronchial tubes, and this we call bronchial or *tubular breathing*; at the same time, if the patient speak, the voice comes direct to the ear, and we have *bronchophony*; on percussion the chest is dull, with a feeling of resistance, or sometimes the note is woodeny and high-pitched, and, therefore, occasionally students are heard asking whether the sound should be called dull or hyper-resonant. When the patient speaks, the hand should be placed on the chest, when the *vocal fremitus* is very usually found to be increased in intensity. The *respirations* are of course quickened, being often thirty to forty per minute. Occasionally *jaundice* accompanies pneumonia, and this occurs when the pneumonia is on the left side as well as on the right side, and, therefore, the explanation of its occurrence by the transmission of the inflammatory process through the diaphragm, or by pressure on the vena cava will not hold good. The *urine* is remarkable in being deficient in chlorides, whether this is owing to the salt being all used up in the lung or whether this absence occurs in pneumonia in common with some other febrile complaints, has not yet been determined. We test the urine by adding a little nitric acid and then nitrate of silver. Sometimes albumen is found.

As just now said, if inflammation attacked the whole lung simultaneously, it is possible that the duration of the process would not exceed forty-eight hours, but since the inflammation begins ot one spot and travels through the lung, the whole duration of the inflammation is generally several days. After the fine crepitation has passed into the tubular respiration, denoting hepatization of the lung, rapid recovery takes place, the dulness on percussion becomes diminished, the tubular breathing less, until the normal resonance and breath-sounds are again heard. In some cases, if the patient be examined exactly at the right moment, a crepitation may again be heard as the disease undergoes resolution, this is called the redux crepitation. It is not often heard, because at the same time much of the effused secretion is poured out into the tubes, and bronchial rales then occur, which quite obscure the finer sounds of minute crepitation. If these moist sounds, however, are heard in the bronchial tubes, they are not very extensive if the patient recover—universal bronchial râles being regarded as a bad symptom. It is not at all uncommon for resolution to take place without the ocurrence of any moist sounds. The lung indeed has become rapidly solid, and then as rapidly recovered itself, without the process being apparent by the discovery of any form of crepitation, at the same time there may have been no expectoration whatever. If secretion has been present, and the case terminate favourably, it is seen to undergo a change after the inflammation has reached its height, the sputum becomes less rusty by changing to lemon colour and then to white; it at the same time becomes more watery, until at last it resembles gum-water. Whilst these physical signs are altering, the febrile symptoms are departing as denoted by the fall of temperature, lowered pulse, cleaning of tongue, &c,

If the case should take an unfavourable course, we find that, after the disease has reached its height, the lung become hepatized, the fever symptoms abating, and we are regarding it hopefully, the patient again loses his strength, and that the expectoration contiunes, together with rales in the chest. Now, in the favourable case the expectoration becomes less coloured until it is white, but in the unfavorable one we observe that the sputum becomes more dark, from rusty it turns to dark purplish black or prune-juice colour, and then to that of liquorice juice or absolute blackness. Expectoration of this color is the very worst omen we can have in a case of pneumonia; at the same time the simple tubular breathing has changed into bronchial rales throughout the chest: in a day or two more the patient dies and his lungs are found in the state of purulent infiltration already described.

PHYSIOLOGY OF MOTION AND SENSATION.

By Dr. PYE-SMITH.

(Continued from page 11.)

Lecture V.

The third constituent of the elementary motor-sensory apparatus, which I have again drawn, is the Nervous Centre. This consists of ganglion cells, with fibres connecting them with each other, and with afferent and efferent nerves, blood-vessels, and the peculiar connective tissue of the brain and cord, named by Virchow nerve-glue (*neuroglia*). A ganglion-cell (or nerve-corpuscle) is a large mass of granular protoplasm, with a well-marked nucleus, and two or more "tails," which become directly continuous with an axis, and so with an efferent, or afferent nerve, or with another ganglion-cell. These processes may be hidden or broken in sections, but it seems probable that every cell is either bi-polar with two, or multi-polar (caudate. stellate) with several.

The nervous centre we will first examine in the Spinal Cord. I need not do more than point to these diagrams which recall its anatomy, and will only remind you that the *parenchyma*, or proper substance of the internal grey part consists of ganglion-cells and naked nerve-axes, while that of the white cortical part is made up of medullated fibres. In both there is of course neuroglia and blood-vessels beside, forming the *stroma*.

Here is a frog, which has been pithed, *i.e.*, the encephalon has been divided from the cord. It is, therefore, as a conscious individual organism, dead; for it is incapable of voluntary motion or conscious sensation, but its heart still beats; it still sits up, almost in its natural position; and when I pull away one leg, it is drawn up again. Here, then, you see the functions of the entire cord going on without interference or control by the encephalon. The reflex actions are all in full vigour, those which are not reflex are absent. The condition is like that of a man with paraplegia from injury or disease of the cord. Below the point of lesion tickling produces reflex movement, but there is no feeling (perception) and no voluntary (cerebral) movement. The chief difference is that when respiration is entirely stopped (by the fracture being above the origin of the phrenic nerve), the man's heart stops, and all reflex action ceases, from the centres to the muscles, being no longer fed with blood; whereas, this frog lives, as you see, a long time after he has ceased to breathe. I put him, now, into this basin of water, and you see that he sinks without any effort to swim.

These reflex actions may be exasperated by the influence of drugs. Here is a frog (with the brain crushed, so that it may not suffer) whose skin I have injected a solution of strichnia. You see that at the slightest irritation, far less than was necessary with the unpoisoned frog, the limbs are violently contracted. This liability to tonic contraction on the least afferent stimulus you may, perhaps, see in persons poisoned with nux vomica; it depends on the poison increasing the excitability of the ganglion, also of the cord, and is produced by a similar exaltation of their formation in the terrible disease called tetanus, which you are unfortunately sure to meet with in surgical practice.

Or, again, reflex action may be diminished or suspended. Here is a pithed frog, which has been poisoned by the subcutaneous injection of Woorara (also written Uraria, or Curari, the deadly arrow-poison) and you see that no irritation of the surface will produce reflex movement. The effect here is not on the central ganglion-cells, but on the motor nerve-fibres, or rather probably on the end-organs by which they are connected with the muscular fibres. The muscles themselves still respond to galvanism, a proof I gave before of the independence of muscular irritability.

In a normal frog, and still more in a healthy man, these reflex or spinal functions are controlled by the encephalon. To show how this occurs, I must add to our original diagram of a simple sensori-motor apparatus, commissural fibres (axis-cylinders), which run up from these two ganglion-cells in the cord to these two in the brain. One is ascending, carrying the impression on the sensitive spinal cells up to the perceptive cell in the brain, the other is descending, stimulating or checking the motor spinal cell to which it runs, by a volitional impulse from the brain.

You have seen how reflex movements are not only independent of the brain, but are checked by its influence, so that we judge by their perfection in a patient paraplegic of the extent to which the disease has severed his cord from his brain. Beside the spinal cord, as anatomically defined, we must include in the physiological "central spinal system" the medulla oblongata (or bulb), the thalami and corpora striata (which may be considered the butt end of the cord), and the cerebellum. The sympathetic system is also an appendage of the same reflex apparatus. When the rest of the nervous centres is removed and these are left intact, volition and conscious sensation are abolished, and only reflex actions remain; though these are more elaborate, more co-ordinated (or combined to some apparent purpose) and more capable of continuance than when the cord is divided from the medulla.

You will often have occasion to observe the spinal system in this extended sense working and maintaing life while the functions of the cerebrum are suspended by pressure of a piece of bone (depressed fracture of skull), or of blood (cerebral hæmorrhage), or by its being poisoned with impure blood, as in uræmic coma, opium poisoning, chloroform inhalation, and dead drunkenness. The condition is obviously one of degree, and so we judge of its extent by such observations as the effect of light upon the pupils. Even when these no longer respond to light, we may make the patient swallow by placing medicine on the back of the tongue, he continues to breath, and the pulse gives evidences of circulation of the blood.

The breathing of the heart, then, respiration, deglutition, are all strictly reflex actions. But while some of these cannot be produced by will (*e.g.* the peristaltic action of the intestines), others may be imitated, as it were, by the will acting directly on the spinal ganglion-cell, and making it transmit a message down an efferent nerve, as if it had been stimulated by an afferent current. This usurpation, however, often does the work ill, as you will find when you tell your patients to breathe, instead of allowing them to do so unconsciously by reflex action. Again, while some reflex movements are never felt (*e.g.*, the contraction of the iris), we are conscious of most, as of swallowing. Again, thongh the afferent stimuli which produce the reflex actions of breathing, vomiting, and peristaltic action of the bowels are not felt, and do their duty as well without, yet they often are so. Other reflex actions though involuntary, can only follow a sensation, of which we are conscious, such as

coughing and winking the eyelids. I have drawn up this list of "spinal" functions. You will be able to increase it by careful observation in health and disease—

Sneezing
Coughing
Winking
Hiccough
Expulsion of the fœtus
Ejaculatio seminis
Deglutition
Vomiting
Movements of iris
Respiration
Movement of the fœtus
Peristaltic action
Sucking
Contraction of the arteries

As you know, the discovery of the true physiology of these actions was made by Dr. Marshall Hall, who gave them the name we still use, excito-motor.

MEDICAL WARDS

—o—

Cases admitted from April 16 to April 22,

MARY

4—Rheumatism
12—Pelvic Cellulitus
18—Bronchitis

JOHN (Clinical).

4—Growth in Chest
11—Cervical Chorea
13—Rheumatism
16—Hœmoptysis

MIRIAM (Clinical).

20—Cancer of Liver

ADDISON

23—Syphilis
37—Pyrexia

STEPHEN

1—Rheumatic Pericarditis
3—Osteoarthritis
14—Morbus Cordis—Aortic
23—Phthisis
23—Diabetes Mellitus
30—Cerebral Disease
35—Pleuro Pneumonia
47—Morbus Cordis—Aortic

SURGICAL WARDS.

—o—

Cases admitted from April 16 to April 22, 1874:

CORNELIUS

19—Contracted Knee-joint

MARTHA

7½—Scalp Wound—Fractured—Skull (?)
9—Lacerated Wound Face
12—Disease of Knee Joint
14—Abscess, connected with decayed Tooth
18—Abscess of Breast
19—Carcinoma Mammæ
22—Strangulated Femoral Hernia—Operation—Death
9½—Scrotal Hernia—Reduced

LAZARUS

5—Scrotal Hernia—Reduced
5—Extravasation of Urine
7—Contusion of Scrotum
10—Suppuration in Knee-joint
11—Cystitis
16—Gangrene Foot
17—Fractured Thigh
19—Fractured Ribs—Internal injury
22—Fractured Patella

NAAMAN

1—Loose Cartilage in Knee-joint
8—Recurrent Tumour of Nose

LUKE

6—Tumour in Neck

JOB.

8—Aneurism of Common Femoral

DORCAS

10—Kyphosis
22—Hairy Nævus of Face

LYDIA

10—Hare Lip

ACCIDENT

1—Lacerated Wound Face—Fractured Ribs
4—Dislocation of Hip on to Dorsum Ilii
6—Contusions of Legs
8—Fractured Clavicle
10—Compound Depressed Fracture of Skull
11—Contusion of Foot
11—Fractures, Tibia and Fibula—Pott's
14—Fractured Ribs—Fractured Fibula—Scalp-wound—Injury to Back
22—Fractured Tibia and Fibula
23—Wound into Knee-joint
30—Injury to Hand—Amputation at Wrist-joint
31—Contused Leg
31—Fractured Tibula

CHARITY

No Admission.

ROYAL COLLEGE OF PHYSICIANS.

The following gentlemen passed for the recent examination for the L.R.C.P. Lond. :—

Mr. Crowther, M.R.C.S.
Mr. C. Duran, M.R.C.S.
Mr. Keer, M.R.C.S., L.S.A.
Mr. W. Paley M.R.C.S.
Mr. W. A. Simmonds, M.R.C.S., L.S.A.
Mr. H. N. Smith, L.S.A.

ROYAL COLLEGE OF SURGEONS.

Diploma of Member.

Examination on Surgical Anatomy and the Principles and Practice of Surgery.

April 17, 1874.

From 1 to 4 o'clock, P.M.

Candidates *must* answer at least four out of the six questions. Answers to *less* than six questions will not be received before half-past 3 o'clock.

1. Mention in order the various structures which must be divided in Syme's Amputation at the Ankle-joint.

2. Enumerate the various forms of Hydrocele of the Testicle and Spermatic Cord; and describe the pathological anatomy, diagnostic symptoms, and treatment of that form which most commonly affects the Cord.

3. Describe the operation for Extirpation of the Eyeball; and mention in their order the parts divided.

4. What treatment would you adopt in a wound of the Deep Palmar Arch? Give the anatomical reasons which would guide your treatment in the difficulties that may arise.

5. Describe the operation of tying the Common Iliac Artery. State by what channels the collateral circulation would be carried on.

6. Describe the usual Dislocation of the Thumb at the metacarpo-phalangeal joint; explain the difficulty sometimes experienced in its reduction; and indicate the appropriate treatment of this injury when simple and when compound.

Examination of the Principles and Practice of Medicine.

April 18, 1874.

From 1.30 to 3 o'clock, P.M.

1. Describe briefly a case of Acute Rheumatism, wth the appropriate treatment, Afterwards state the complications which may arise, giving the diagnosis of pericarditis, endocarditis, pleurisy, and pneumonia, or any other complications which you may remember.

2. Describe a case of Diabetes. detailing the symptoms and treatment, both medical and dietetical, together with the tests for sugar. As far as time will allow mention som of the theories as to its nature or causes.

3. Mention some of the more common aperient medicines contained in the Pharmacopœia. Write a prescription for an appropriate purge in renal dropsy; another for an occasional pill in chronic hepatic disease, and a third for a medicine suitable for habitual constipation in a young female.

SECOND COLLEGE VIVA VOCE EXAMINATION.

First ten minutes. Diagnosis of case of periostitis and ostitis. Idiopathic in a badly nourished boy. What makes you say there is ostitis and not merely periostitis. What treatment would you adopt? Case of vaginal hydrocele. Would'nt the feeling of the tumour and the feeling of the cord of the testicle be sufficient for your diagnosis? Case of Ranula and treatment.

Second ten minutes. Put your finger on the crural ring. What passes through it abnormally? Mark out the femoral vein and artery. Compress the femoral artery. Mark out the abdominal aorta, common internal and external iliac arteries. Compress the brachial and subclavian. Excision of breast. Mark out your incision. Why do you begin by the lower incision first? In which direction would you cut to remove the tumour from the pectoralis muscle? Would you make a new incision in the skin to remove the axillary glands when ifiltrated? How do you tie the common carotid? What do you cut through? What does the sheath of a carotid contain, and what is it made of? How do you perform tracheotomy? What is your guide, and what do you cut through? Mark out internal and external ring. How do you examine the external ring?

Third ten minutes. Specimen of rectum and anus showing external piles? What are piles? The causes and treatment. What may they give rise to? What is fistula? Causes and treatment. What is fissure of the anus, and your treatment. Have you seen a case of concussion of brain? Describe the symptoms. What kind of symptom is vomiting when present? To what is vomiting due? Is it that the stomach is diseased? Shown a specimen of enchondroma of the phalanges of the fingers.

Fourth ten minutes. Distorted tibia and fibula by rickets. What is rickets. Its symptoms. At what age is it seen? What is one of the first symptoms? Shown lithic acid stone, oxalate of lime stone, and phosphatic stone, and biliary stones. Shown a specimen of old hæmatocele, with layers of lymyh organised in enlarged tunica vaginalis, and section of teaticle inside it. What else might it be? How do you distinguish hydrocele from hæmatocele? How do you treat hæmatocele? How do you distinguish it from cancer of the testicle?

The following Guy's men passed:—

Mr. Bingham, L.S.A.
Mr. Crespin
Mr. Fry, L.R.C.P.
Mr. Griffiths
Mr. Morley
Mr. Nash, L.S.A.
Mr. Nunez, L.R.C.P.
Mr. Rendall, L.S.A.
Mr. Tyson
Mr. Utting

Mr. Jumeaux and Mr. Lamb passed Surgery only.

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Printed and Published for the Proprietors by O. G. BRIMMER, 104 Borough High-street, Southwark, Surrey.—Saturday, April 22, 1874

Guy's

Hospital Gazette.

VOL. IV.—No. 4. SATURDAY, MAY 2, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

By the time this reaches our subscribers we shall have entered another session and a few fresh faces will appear among us, and those who have been away ruralising will now return with double vigour to resume their studies. Had a medical student himself been placed at the head of the weather office he would not have ordered brighter weather at a more suitable time for his fellows. We hope those who have been basking in the sun away from the bustle and confusion of London have had their brains rested and their energies braced up so as to be able to set to work again in earnest, and make the best of the present session.

We have often heard the question asked—What's a fellow to do in the summer session at the hospital? This seems absurd, but nevertheless 'tis true. Men, whose diligence has been marked with success, say to themselves and those around—I've passed my First College, I'm bothered if I'll do much this session, and a very great number of them are more faithful to their delusion than they are to their own interests. Why this should be the case we cannot say; we are only sorry to be able to say that 'tis but too true.

Now, all men know that virtually the first and second winter sessions are spent in acquiring such knowledge as shall qualify for the primary examination at the College of Surgeons; nominally, there are courses of instruction, lectures, &c., to be attended relative to the pass examination in both Medicine and Surgery, but excepting the practical teaching of Surgery we may say that the rest of the teaching of Medicine and Surgery is merely nominal to the man who is studying for his primary at the College. This being so the question arises—In what position does a man really stand in his curriculum after he has passed his First College?

One must bear in mind there are other qualifications to be obtained besides those given at the College of Surgeons. There is the most common—the Apothecaries' Hall; then there is the College of Physicians. What amount of study do these entail? Take the primary examination at the Apothecaries' Hall, and we would almost venture to say some men find more difficulty in passing this than they did in passing their First College; then there is Chemistry, Materia Medica and Botany to be read up. It may be said that the knowledge of those subjects required is only very superficial; this may be the case with regard to the Botany, but with Chemistry and Materia Medica the case is very different, and we must warn men against thinking that the examination in those subjects is at all superficial; to be sure of passing one must have a thoroughly sound knowledge of Chemistry, and must be familiar with all processes and ingredients used in preparing the multitude of drugs in the British Pharmacopœa, and we have recently been informed that Anatomy forms no small part of the examination, and all know that this requires constant reading or one readily and soon forgets it.

In considering these points we are afraid that, after all, when a man has passed his much dreaded First College he finds he is by no means so far advanced as he expected he would find himself; he will not, on reflection, think it prudent to take to himself the following summer. Chemistry, Materia Medica and Therapeutics are in themselves sufficient to occupy the session, and to furnish more than enough material for steady working, add to these subjects some minor appointment as surgical ward clerk or dresser in the surgery, and a careful attendance of the prescribed course of lectures, and the student will find that he has more than enough to attend to. Remember that there are medical as well as surgical qualifications to be obtained, and that each requires a great amount of work, the one equal to the other. Then, as the first two winters are devoted to studies preparatory for the surgical, so ought the first two summers be devoted to studies preparatory for the medical.

We sincerely trust that the efforts of those who adopt these principles may be crowned with success, and that the session upon which we have just entered may be attended with prosperity to all connected with our institution.

LECTURES ON MEDICINE.

—o—

DISEASES OF THE RESPIRATORY ORGANS.

By Dr. WILKS.

(Continued from page 19.)

PNEUMONIA (Continued).

Let me draw your attention to the importance of noting the general febrile symptoms in pneumonia, as well as the physical signs, and let me add that the same remarks are equally applicable to other diseases. You may, for example, be called to a patient in whom all the physical signs of pneumonic consolidation are present, but you want to know whether the disease is still progressing, or has reached its height. Now this can only be told by observing the presence or absence of febrile symptoms denoted more especially by the temperature. If this be normal you know that the inflammation has ceased and no active measures are needed. The same remarks, I say, apply to other diseases, as, for example, phthisis. The amount of actual disease in the lung, such as a cavity, is not so diagnostic of the patient's real condition, as the presence of febrile symptoms, which indicate the progressive nature of the malady. A phthisical patient, with febrile disturbance, without much physical evidence of disease is in far worse condition than another who has indications of a large cavity, and no constitutional disturbance. Therefore, do not forget to note both symptoms and physical signs in all cases, and not devote all your attention to the latter.

Diagnosis.—It is scarcely worth while to contrast pneumonia with other diseases, for, if you know the symptoms attaching severally to them all, you will not fail to diagnose it. I have constantly seen pneumonia overlooked, but I attribute this to carelessness. I have constantly seen it mistaken for fever, and I have seen it called inflammation of the brain on account of the delirium, but in these instances the chest had not been examined. At the onset of acute chest disease it is sometimes difficult to form an opinion as to its seat, the patient complaining merely of constriction around the body, and the case may therefore be regarded as one of colic. This has been usually the case when some diaphragmatic pleurisy complicates the pneumonia. The distinctions between pneumonia and pleurisy I shall leave until I come to pleurisy.

Prognosis.—This depends so much upon various circumstances that statistics taken from all cases are of little value. Pneumonia often contributes the final stroke in many diseases, as Morbus Brightii, and constantly complicates other maladies. When it occurs as an acute affection, it may be associated with a pleurisy or a bronchitis. If it occurs in its simplicity, it may involve a lobe, a whole lung, or both. The right lung is most usually affected, and more especially the lower lobe. As I before said, the stages are run through in two or three days, but since the inflammation begins at one part and travels through the lung, the duration of the inflammation in any given case is longer than this.

Treatment.—Pneumonia has been the battle ground of therapeutists in all times. The easily defined and acute nature of the disease caused it to be a promising field for the adventurous trials of enthusiastic physicians, whilst the very fleeting character of the complaint made it above all others the most difficult in which the effects of remedies could be discovered, and thus it has happened that the most opposite and conflicting opinions have been thrown about by those who have waged war on the subject. We have had advocates of antiphlogistic treatment opposed by equally strong advocates of stimulating treatment, whilst a third party has stood by and declared that all the vaunted means were useless. There was a time when bleeding was always had recourse to and repeated several times, accompanied by medicines consisting of salines, antimony, mercury, and opium. A modified plan of this kind has continued to be the one generally in use until recent times. A few years ago a fashion came into use to treat every one with alcohol, and consequently the only physic for pneumonia was brandy; of late, Professor Hughes Bennett, by studying pneumonia in a more scientific spirit, has come to the conclusion that this disease, like the fevers of which I have been speaking, runs its course and comes naturally to its end in a few days without any interference on the part of the medical man. If this be found to be true by further observation, I shall certainly enforce it upon you, for all we want is to know the truth of the matter. We are bound to do the best for our patients, irrespective of any traditional sentiments about the necessity of physic giving. I do trust that as educated men you will have so strong a faith in the progress of scientific discovery and truth, that you will always be ready, however old you may grow, to believe that advances are being made in our therapeutic art, and that you will not fall into the category of benighted old gentlemen, who when they see patients recover under a very different treatment than that which they adopted whilst in practice, maintain either that the whole race of men has suddenly changed within thirty or forty years, or that the science and art of medicine has retrograded, and the world is ignorant compared with the enlightenment of the age when they were boys. One is forced to make these remarks when one reads in the journals a letter by a highly-respected, though aged physcian, declaring that medicine has been retrograding during the last twenty years since he left practice.

Now, however, comes the practical question as to what I should advise you to do in a simple case of acute pneumonia. First of all, don't give brandy as a remedy, except under special circumstances; as regards the old antiphlogistic treatment, I should like to say as regards bleeding, that there cannot be a doubt from the truthful character of the records, that its use was often attended with a striking good result. We read of persons sitting up in bed with great oppression of breathing, their faces gorged with blood, and the surgeon coming in with his lancet, bleeding in a full stream, and immediately quieting the respiratory process, and relieving the circulation. In such cases there may have been bronchitis or there may have been heart disease, but the results were nevertheless striking. This seems to show that in cases of great engorgement of the lungs of the right side of the heart, bleeding will afford relief and, therefore, under similar circumstances, I should advise you to have to recourse to the measure. When you find the venous system gorged in primary affections of the lungs, or in secondary congestions, as in heart disease or from paralytic conditions as in apoplexy, you cannot be wrong in bleeding; you relieve the venous system as well as the right heart, and allow the circulating apparatus to right itself. I have bled patients a sufficient number of times under these

circumstances to be able to advise the method with confidence. The objection sometimes made, that the patient is too weak, as indicated by the pulse, is futile, since, owing to the small amount of blood which reaches the left ventricle to be propelled onwards, the pulse is naturally small. Therefore, when I say bleed in pneumonia, it is when the lung is much oppressed and the venous system gorged. I cannot recommend venesection for the reasons our forefathers did, to knock down the disease at its onset, for I have no experience of the treatment under these conditions.

Now, as regards the other parts of the antiphlogistic treatment, I feel confident that opium deserves the title; when one sees inflammatory processes subside under its use, I cannot doubt of its influence over them; opium is, therefore, a good remedy, but must be administered with caution, since it acts directly on the respiratory centre to lower its activity. If, therefore, there is not much power of breathing and much mucous in the tubes, it must be given with the utmost care; provided it has no injurious effect in this way, its use is for good. Now as regards antimony, I believe there is sufficient evidence to shew that this drug acts also on the vascular system through the nerves, and may, therefore, be called antiphlogistic. As for calomel, I hesitate to put it in the same category; that it has a power of acting on the secreting organs and stirring up the tissues to some kind of activity I have no doubt and thus when various inflammatory results have taken place in the body, mercury is found instrumental in aiding to get rid of them, but whether it has any power of arresting inflammatory processes, I much doubt. Salines are usually given as acting on the skin, kidneys, &c.,and as some say for actually cooling the blood. I think there is some evidence to show that the old method of treating pneumonia was followed by as good results as any other, and having been a witness myself of the method in a great many cases, I have no hesitation in recommending its continuance until it has been satisfactorliy proved that all medicines are ineffectual. In a tolerably strong person you may wish to omit the antimony. Under these circumstances you might be content with the saline mixture and Dover's powder. If the patient be feeble, you might give ammonia with the saline and some alcohol, a table spoonful of brandy or whisky with egg every three or four hours. I cannot advise you to give a bottle or two of brandy in the twenty-four hours any more than if I recommend opium or quinine that you are at once to administer it indiscriminately and in poisonous doses. I would also recommend you not to use blisters in acute pneumonia, I am strongly impressed with the conviction that they are worse than useless. But you may use the warm jacket by means of hot flannels or spongio-piline tied around the chest. The increased flow of blood to the surface seems to relieve the internal congestions.

I told you that statisticians are showing that the best results have been obtained when no medicine has been given, since the disease must run its natural course. If this be corroborated by further observations, I may at a future time instruct my class to follow merely the expectant plan. There seems no reason, however, theoretically, why the inflammatory process should not be arrested in any one spot, and certainly no reason why it should not be prevented from extending. We meet with cases where the inflammation is limited, showing there are circumstances which affect the process for good or evil. These may be found in the form of drugs and therefore I continually use the various substances from time to time recommended. At the present time, veratrium, digitalis, and aconite are undergoing a trial by various medical men, and even the use of cold water.

PHYSIOLOGY OF MOTION AND SENSATION.

By Dr. PYE-SMITH.

(Continued from page 21.)

Lecture VI.

Looking again at the list of Reflex Actions I wrote down, you will notice that while some are purely excito motor without consciousness or volition ever coming in, others admit one, or other, or both, under certain conditions. Sucking in a new-born child is probably as purely reflex as the movements of paralysed limbs—this seems proved by the fact that an encephalous infant is able to suck, but in an adult the apparatus has evidently got out of working order by disuse, and he has to perform the act by a voluntary effort. On the other hand it is possible to make a movement which was voluntary follow of itself upon a given stimulus. As the child ceases to suck, it learns to walk; and at first this needs all the efforts of its will and attention (to touch and to muscular sense); but when once learnt, the action becomes more or less automatic, and we walk after once starting without feeling the ground or exerting our will. (Animals appear to swim or walk at once, while they have to *learn* the more difficult manœuvres of the chase.) Somewhat later the child learns to talk, and this in the adult is an action which is accomplished without any expenditure of thought—at least upon the nerve process. Writing follows the same rule. One object of education is to train the nervous system that as large a number of mechanical acts as possible shall become automatic, and thus cerebral expenditure be spared for more important functions. We may form some conception of the way this training takes place, if we suppose that every ganglion cell has a large number of connecting fibres with the rest, and that the way nerve-currents shall flow depends upon the amount of resistance offered in each fibre. In some few cases in man, in many more in animals, certain important highways are, as it were, ready-made, at or even before, birth. Others are gradually smoothed by the effect of repetition. A nerve-current passes readily along these beaten tracks, just as any other force follows the direction of least resistance. But as fresh paths are rendered easy and habitual, the old ones may become obstructed by want of use, until they are only to be 'forced" by a voluntary impulse. Even, then, it is difficult for the will to guide the current aright down an unfrequented path, as we see when we attempt to relearn some forgotten manual art.

Nay, we may carry on the same argument to explain the effect of habit over even voluntary actions, so that, as Paley taught, one object of doing a right action is to make the habit so ingrained that at last we do right without thinking of it, as a kind of second nature.

There is a certain class of reflex actions which, though more or less involuntary, depend not even on a sensation (conscious or unconscious), but on a purely mental state.

There are such actions as laughter, weeping, blushing. The first, like other reflex actions can be imitated by a voluntary effort, but the result is but Sardonic mirth: the action of the lacrymal gland and the relaxation of the muscular coat of the arterioles of the face are beyond the power of simulation.

These lead on to what we call voluntary actions. You cannot laugh at will, but you can choose by volition a book that shall make you in spite of yourself; and so it might be argued that a man cannot adopt a new course of life by a single act of will, but must put himself under such conditions as shall make it comparatively easy, shall make it the course which involves least resistance.

There is not, therefore, an insuperable barrier even at this last point of the long chain between the purely reflex action in the fragment of a frog with which we started, and the highest deeds of the most perfect human organism. It might be plausibly maintained that even actions which are apparently purely voluntary may really depend on some antecedent impression which has left its force stored up in the cerebrum until at last it finds its impression in a muscular contraction. (Coleridge's argument as to getting out of bed met in this manner.) *Nihil est in intellectu quod non prius fuit in sensu;* and should we accept Leibuitz's addition, *nisi intellectus ipse*, that will scarcely make an exception, if we make the senses include not only the impressions on the individual, but those on his parents, and those on the entire race.

(The development of the conscious and voluntary element in sensor-motor functions was then briefly sketched from the launlet, which has a purely spinal system, through the other vertebrata up to man; and in a similar manner from the fœtus and the infant up to the adult.)

ANATOMY.

At a recent anatomical examination it was asked of a student—"What is there special about the distribution of the subclavian artery?" We do not believe that a full explanation is given in the usual text-books on Anatomy of this and parallel questions. The following excerpt from the valuable notes by Dr. Pavy of Lectures on Anatomy by Mr. Hilton contains a full and interesting answer to the question, and at the same time serves to show that no distribution or arrangement occurs in any part of the body without being either in some known or unknown manner conducive to perfection of the whole.—ED. *G. H. G.*

"The branches of the subclavian seem specially intended to supply the structures connected with the *functions of respiration.* Now, the two vertebrals, which are derived from this trunk, enter the cranium through the *foramen magnum*, and are distributed not only to the *medulla oblongata*, *pons varolii* and *cerebellum*, but likewise to the dura mater connected with the basilar process and the inferior occipital fossæ; so as, in fact, to build up and afterwards to maintain the osseous structure, associated with the same function as the above enumerated soft parts. The basilar process, as you know, constitutes the point of support of the *medulla oblongata*—the nervous centre of the process of respiration; and the other portion of the occipital bone supplied by the vertebrals, gives attachment to muscles on the posterior part of the neck, which are employed in the respiratory function.

The subclavian has two separate intentions to carry out; one the supply of the upper extremity; the other, the building up and nourishing the parts connected with the function of respiration, as will be seen on examining in detail the branches that arise from it.

The vertebral, besides supplying the parts above-mentioned, is distributed to that portion of the spinal marrow from which the phrenic, spinal accessory, and posterior thoracic—all important nerves of respiration, take origin.

The internal mammary supplies the sternum, cartilages of the ribs, origin of the *pectoralis major*, phrenic nerve, diaphragm, and the upper half, or the respiratory portion, of the abdominal muscles.

The first intercostal artery goes to the first, or the first and second ribs. Now, the first is the only rib that becomes consolidated to the sternum, and it is of all the others the most important in the respiratory function, as it forms the fixed point for the action of the intercostal muscles in elevating the chest.

The thyroid axis divides into inferior thyroid, transverse, cervical, and supra-scapular. The inferior thyroid builds up the trachea—a tube essentially connected with respiration; and sends a branch upwards (ascending cervical) which accompanies and nourishes the phrenic nerve, and constitutes, in fact, an ascending *comes nervi phrenici.* The transverse cervical supplies the trapezius and the posterior border of the scapula with the muscles attached to it; all of which may be considered respiratory. The supra-scapular supplies the clavicle and scapula; both of which are rendered respiratory by the attachment they give to respiratory muscles."

A parallel case is found in the distribution of the Internal Maxillary Artery.

"The aggregate or essential purpose of the internal maxillary artery is to build up and nourish those parts directly necessary or accessory to the process of mastication, so that it may be fairly called the *masticatory* artery. From this trunk is derived the middle meningeal, which, whilst ramifying in the *dura mater*, gives branches outwards, that supply the squamous portion of the temporal, the *ala major* of the sphenoid, the frontal and the parietal bones;—those bones, in fact, which contribute to form the temporal fossa, the point of origin of the temporal muscle, one of the chief motor agents of mastication. It also gives a branch inwards, to develope and maintain that other portion of the *ala major* of the sphenoid which gives attachment to the *Pterygoideus externus*—another important muscle of mastication. The middle meningeal artery, therefore, arising from the internal maxillary trunk, may be said to be sent by it into the interior of the cranium to build up and afterwards to nourish that portion of its extent, which, in giving attachment to masticatory muscles, is rendered subservient to the masticatory function.

We see, then, the explanation of why the internal maxillary artery should send a special and, as it were, devious branch into the interior of the cranium, through the *foramen spinosum*, and we find that it forms but another illustration of the admirable precision and perfection of the works of Nature. That an artery supplying a structure contributing to a certain function, should form an offset from the trunk, that we notice supplying the other structures administering to the same function, is nothing more than we might expect, in order to insure a simultaneous and harmonious progression in the development and nutrition of the whole.

So fully indeed is this intention carried out that a small artery, also given off from the internal maxillary, enters the cranium through

the *foramen ovale*, apparently for the express purpose of furnishing nutritive material to the third division of the fifth—the nerve that supplies the muscles of mastication. Now, although the intracranial portion of the third division of the fifth is situated in such close proximity to the entrance of the internal carotid artery into the skull, yet it is not supplied by this vessel, but, as we observe, receives a a distinct offset from the masticatory trunk, so that its nutrition may be maintained in the closest possible relation with that of the other structures administering to the same function."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Diploma of Member.

Anatomical and Physiological Examination.

April 25, 1874.

From 1 to 4 o'clock, P.M.

Candidates *must* answer four out of the six questions. Answers to *less* than six questions will not be received before half-past 3 o'clock.

1. Describe the course and relations of the Veins which terminate in the Inferior Vena Cava above the junction of the common Iliac.

2. Describe the Os Hyoides; and name the muscles connected to it, specifying the parts of the bone to which each muscle is attached.

3. Mention in their relations to each other the parts seen on removal of the Flexor brevis digitorum Muscle.

4. Descaibe the process of Growth in a long Bone.

5. Describe the Wrist-joint, and the lower Radio-ulnar articulation.

6. Describe the changes produced in Air by Respiration, and the means by which these changes are effected.

The following gentlemen passed on the 29th ult. :—

Mr. Brock
Mr. Bain
Mr. C. Bell
Mr. Hyne
Mr. Lees
Mr. Sheldon
Mr. Wallis
Mr. Williams

The following gentlemen passed on the 30th ult. :—

Mr. Cusack
Mr. Dalton
Mr. L. Jones
Mr. T. Jones
Mr. Oram
Mr. Pedley
Mr. Steward
Mr. Wright

CORRESPONDENCE.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—It would hardly be credited by strangers that so rich and popular a hospital as Guy's denies to its students facilities afforded by other institutions of the same class, which institutions although perhaps equally popular are not equally rich.

To feed the mind is no doubt an excellent thing, and to do so well deserves the highest commendation that can be bestowed, but it does not do to leave the work half-done. The Romans said, "*Mens sana in corpore sano*," a proverb which may be fairly taken to mean that it is no use feeding the *mind* unless you provide proper food for the *body* as well.

Yet Guy's Hospital, unmindful of the opinions of the wisest of their time, provides no refreshment for the body while professing to find that for the mind.

No one who has visited the different luncheon places around the hospital, and who has seen the various temptations placed before students to spend their money and, what is more precious to them, their time—by the caterers for the body—will, I think, deny that the want of a place in the hospital where students could obtain plain wholesome food at a cheap price is greatly felt, and that the establishment of such a place in the precincts of the hospital would be hailed with delight by a large majority of students as a step in the right direction.

Will you, Mr. Editor, lend me your powerful aid in representing to the powers that be that the establishment of a luncheon or dinner bar in the hospital would be a convincing proof to the students that the authorities take no less care of the *corpora* than they do for the *mentes*?

Apologising for troubling you with this letter,

Your obedient servant,

EDENDUM EST UT VIVAMUS.

Guy's Hospital, April 25, 1874.

MEDICAL WARDS

Cases admitted from April 23 to April 29.

MIRIAM (Clinical).

17—Rheumatism
19—Left Hemiplegia
20—Bronchitis

JOHN (Clinical).

13—Pleuro-pneumonia

STEPHEN

14—Rheumatism—Morbus Cordis
26—Erysipelas—Death
27—Pleuro-pneumonia—Death
36—Pleuro-pneumonia
38—Pleuro-pneumonia
46—Ague
48—Gall Stone
50—Mental

MARY

8—Bronchiectasis
21—Purpura Hæmorrhagica
24—Psoriasis

ADDISON

21—Chronic Rheumatism
27—Cephalalgia
31—Rheumatism
33—Pleuro-pneumonia
37—Morbus Cordis (?)
40—Phthisis
10—Œsophageal Obstruction
18—Diarrhœa—Vomiting
20—Phthisis

PETERSHAM,

22—General Œdama—Anæmia

PHILIP

1—Vomiting—Recurrent Attacks
13—Syphilis—Albuminuria
14—Vomiting—Chronic Gastritis Ulcer (?)
16—Albuminuria—Hemiplegia

SURGICAL WARDS.

—o—

Cases admitted from April 23 to April 29, 1874.

ACCIDENT

No Admission

LYDIA

1—Ulceration of Tongue—Follicular
10—Hare Lip
11—Ulcer of Leg

CORNELIUS

1—Synovitis—Knee-joint
4—Railway Injuries—Both legs torn off—Scalp-wound—Death
4—Incised Wound of Wrist
5—Cut Throat—Death
5—Contused Wound of Leg
7—Compound Fracture of Humerus, with Compound Dislocation of Thumb and of Index-finger
8—Crushed Neck—Death
9—Fractured Thigh
12—Cut Throat
14—Fractured Skull—Death
14—Concussion
14—Comminuted Fracture of Tibia and Fibula
15—Fractured Tibia
19—Fractured Tibia and Fibula
20—Fractured Tibia and Fibula

MARTHA

14—Webbed-fingers
21—Disease of Hip-joint
22—Disease of Hip-joint

LAZARUS

3—Disease of Knee-joint
4—Chronic Abscess

NAAMAN

No Admissions.

LUKE

4—Abscess in Popliteal Space
4—Epithelioma of Lip
8—Exostosis on Lip
10—Tumours on Arm—Enlarged Thyroid
11—Perinæal Abscess
12—Calculus in Urethra
13—Carbuncle
14—Epithelioma Scrotum
19—Malignant Tumour on Jaw

JOB.

8—Stricture
22—Irritable Bladder

DORCAS

5—Ulceration of Larynx—Specific (?)
11—Disease of Stump
13—Angular Curvature of Spine—Abscess

CHARITY

7—Concussion
7—Fractured Tibia
8—Concussion—Bleeding from Ear
8—Disease of Ankle-joint
11—Synovitis (?)
13—Fractured Neck of Femur
15—Fractured Tibia and Fibula
16—Disease of Hip-joint
17—Necrosis of Index Phalanx—Amputation of Finger
18—Fractured Patella
19—Stone in Bladder (Lithotomy)
21—Genuvalgum Externum—Destruction of Crucial and External Latera Ligaments of Knee
24—Extensive Contusion of Scalp
24—Fractures of Tibia and Fibula
25—Diseased Tibia—Scabies
25—Burn of Arm
25—Comminuted Fracture of Thigh

COMMUNICATIONS RECEIVED.

Mr. William Horrocks, Sir William Gull, Miss Topping, Mr. S. Atherton, Messrs. Roper and Horsley, Mr. F. Sutton, Mr. T. Joyce, Mr R. M. Craven, Mr. W. D. Ditchett, Mr, J. L. Growse, Mr. Lynes, Dr. J. E. Jones, &c.

GUY'S HOSPITAL BIENNIAL FESTIVAL, 1874.—The DINNER will take place this year on TUESDAY, MAY 5, at Six o'clock, at WILLIS'S ROOMS, KING STREET, ST. JAMES'S. J. COOPER FORSTER, Esq., in the Chair. Past and present Students of Guy's Hospital desirous of having their names added to the list of Stewards are invited to communicate at once with the Honorary Secretary.

ARTHUR E. DURHAM, HON. SEC.

82, Brook Street, Grosvenor Square, W.

GUY'S HOSPITAL.—The Summer Session commences on Friday, May 1st.

MEDICAL OFFICERS.

Consulting Physicians—Sir W. W. Gull, Bart., M.D,, D.C.L., F.R.S.; G. Owen Rees, M.D., F.R.S.
Physicians—S. O. Habershon, M.D.; S. Wilks, M.D., F.R.S.; F. W. Pavy, M.D., F.R.S.; W. Moxon, M.D.
Assistant Physicians—C. Hilton Fagge, M.D.; P. H. Pye-Smith, M.D.; F. Taylor, M.D.
Consulting Surgeons—John Hilton, Esq., F.R.S.; Edward Cock, Esq
Surgeons—John Birkett, Esq; Cooper Forster, Esq; Thomas Bryant, Esq; Arthur E. Durham, Esq
Assistant Surgeons—H. G. Howse, M.S.; N. Davies Colley, M.C.
Consulting Obstetric Physician—Henry Oldham, M.D
Obstetric Physician—J. Braxton Hicks, M.D., F.R.S.
Assistant Obstetric Physician—A. L. Galabin, M.D.
Ophthalmic Surgeon—Charles Bader, Esq
Assistant Ophthalmic Surgeon—G. Higgens, Esq
Surgeon Dentist—J. Salter, M.B., F.R.S.
Assistant Surgeon Dentist—H. Moon, Esq
Aural Surgeon—W. Laidlaw Purves, Esq
Medical Registrar—F. Taylor, M.D.
Surgical Registrar—J. F. Goodhart, M.D.

The Hospital now contains 715 beds. Of these 221 are for Medical Cases; 250 for Surgical; 26 for Gynæcological; 48 for Syphilitic, and 50 for Ophthalmic cases. There are also 30 children's cots and 84 reserve beds (8 in private rooms).

In connection with the Lying-in-Charity, about 2,500 cases are annually attended by the Students.

Number of Patients relieved during the last year, about 81, 000.

LECTURES AND DEMONSTRATIONS.

Medical Jurisprudence—A. S. Taylor, M.D., F.R.S.
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Guy's

Hospital Gazette.

VOL. IV.—No. 5. SATURDAY, MAY 9, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

EVERY one who visits our hospital and chances to go into Library are tolerably certain to ask the intention and particulars of that unsightly piece of red baize in a frame above the fire-place, and what sort of answer can be given? Probably, if the student, who is showing his friend round be particularly patriotic, a shake of the head will be all the response he offers; but if, on the other hand, he does not care much for the prestige of the hospital he may say that there formerly hung the shield won at the United Hospital Athletic Sports in days gone by, but since wrested without much difficulty from our hands. We do not like parting with such a mark of honour without having a close struggle for it, but certainly, last year, was not in any way creditable to our hospital, but such is fate. There is, however, an undoubted tendency for success to depend upon one or two men only, and if anything occurs to prevent those men from attending in good form the hospital has no others to fall back on. What we mean by this is simply that athletic pursuits are not sufficiently general with us. Men never hear of anything going on anywhere about the hospital, or connected with it, concerning preparation for the sports until just previous to the time appointed for the trial at Lillie Bridge. Men who would train for the different feats have no where to train, nothing to train with—in fact, the greater number of the students never know anything at all about "the sports" until they are called upon for their subscription and presented with a ticket for admission to the grounds; then, perhaps, they begin to wonder for the first time how their own hospital will be represented. We will hear some gentleman saying, "I should like to have gone in for putting the shot or throwing the hammer, but you see that requires a great deal of practice to do well, and then I have neither shot or hammer convenient, and if I had, my dear landlady has a decided objection to my throwing either in her back garden, as I am never very certain at first to half a circle where my hammer may go; I did try it once, and battered in a large water butt and flooded the kitchen." We are sure to hear whispers of this kind afloat, and they certainly might be avoided. If a man has never been accustomed, previous to his entry at the hospital, to take part in athletic sports, he will never find anything here to induce him so do so. And even if he has been accustomed to such, he will find little indeed to induce him to keep up his previous position; indeed, he will have difficulty in finding any opportunity for exercising unless he goes beyond the associations of the hospital for it.

Now, this should not be so. If Guy's would see that shield again, idleness must not be allowed. Men ought to begin about forming some club at once; it is no use waiting until the trial is at hand, and then march in and expect to do anything creditable, that won't do, you might as reasonably expect to pass an examination with a week's previous reading—the result of the one would be just about parallel with the result of the other. The only way we see of obviating the mischevous results that are very apt to follow if we are dependent on one or two men to do all, is to organise some club at once and give men some opportunity of trying their powers. When one considers the expense associated with such it would be very light, and with the number of men there are here at Guy's, it would be strange indeed if we could not find some who by practice would become more or less excellent in some one or other of the numerous sports which fill the list. The interference that this would be with the usual studies of hospital, would be salutary than otherwise, for no one who has ever worked in his life would deny that he has felt in better trim for study than when he associated his labour with a fair amount of healthy exercise.

We have thrown out these hints with a sincere hope that they may not go to the winds, but that some one may just think over and bring about an arrangement whereby some effort greater than before will be made to retrieve the honour of the hospital and bring back to her the lost shield.

LECTURES ON MEDICINE.

—o—

By Dr. WILKS.

DISEASES OF THE AIR PASSAGES.

(Continued from page 19.)

It is best to divide the air passages, in order to study their disease, into the larynx and trachea, larger bronchial tubes and the smaller or capillary tubes. The larynx and trachea are very commonly affected together, and, therefore, it is a mistake to suppose that croup is a disease of the trachea alone. This complaint has generally been styled a membranous inflammation of the trachea, because casts of the trachea are found to be ejected, but the symptoms have reference rather to inflammation of the larynx, which is the part more especially affected. The term "croup," has become, therefore, to be theoretically defined in one manner, but practically used in another. It being often quite impossible in any given case where croupous syptoms exist to know whether the trachea is affected, much less whether there be a membrane, the term croup is made applicable to any case of laryngitis in a child; croup, indeed, for all practical purposes is laryngitis. In very many cases, whether ending in recovery or death, there has been no evidence of any other affection than this; and in all probability nothing more then a simple laryngitis could have been present when a cure has speedily followed the use of remedies or tracheotomy. There is another form of inflammation in which the exudation is membranous; this would be properly called true croup, but since it is often impossible to distinguish it from the catarrhal variety, we cannot limit the term to this form. Then, again, the membranous variety may be of a diphtheritic nature, and thus if confined to the air passages may not be distinguishable in its anatomical character from ordinay croup, and, therefore, there are some in the profession who maintain that this likeness is sufficient to constitute their identity. In all these forms which I have mentioned the term laryngitis may be used, as there is fever and constitutional disturbance, but there is still another variety of laryngeal affection which sometimes momentarily puzzles us, and that is when a spasm of the muscles of the larynx suddenly comes on, producing violent paroxysms of choking. The matter, therefore, stands thus :—

Croup. { False Croup or laryngismus stridulus
Inflammatory croup { Catarrhal
Membranous { Simple
Diphtheritic

If a child is suddenly seized with laryngeal symptoms and these speedly pass off, and the child is accustomed to have them, the affection constitutes the first or nervous form of croup or false-croup. But when a child with previous symptoms of cold, becomes very rapidly hoarse or has a crowing respiration, it is very evident that the upper part of the larynx is becoming closed by inflammatory swelling, and we say the child has croup. We cannot tell at this time whether a membrane be forming or not; that is whether inflammation is simply catarrhal or membranous. I should advise you to adopt in all cases of the kind the old-fashioned treatment, give an emetic of antimony until the child is violently sick; the vomiting is a good remedy in itself, it promotes the expectoration of inflammatory products, and the effort causes air to enter more deeply into the lungs. If the child rapidly improves, the chances are that the case is one of simple laryngitis. If the suffocation have been so threatening as to necessitate tracheotomy, and the child speedily recover after the operation, then again the probabilities are that the case is one of the same simple kind. If a membrane be present, the case is much more formidable, especially if it arise in connection with a constitutional disease like diphtheria, instead of its being a complaint of a simple or local nature. You know from the time since medical literature has existed, croup has been recognized as a disease in which a membrane may be formed in the larger air passages. Now since diphtheria has prevailed in the country the same thing is often seen in connection with undoubted diphtheritic disease, wherefore it is said that the well-khown or old-fashioned croup was nothing less than diptheria, but it was not recognized as a constitutional disease until late years, when it presented, as it may be inferred, a more violent character. I, myself, do not hold this view for many reasons; first, because an anatomical resemblance alone is not sufficient in any case to constitute the identity of two diseases, and more especially can it not be so considered in membranous inflammation of the larynx, seeing that it may arise as a consequence of injury or after the swallowing of hot-water: the membranous nature of the affection, therefore, cannot show that the inflammation is not purely local, and there is no reason in the case of croup to suppose that it is otherwise; whereas in the diphtheritic membranous inflammation there is often a remarkable depression of the nervous system, as well as albumen in the urine. This latter fact is often taken as a test of the nature of the affection and suggestive of the appropriate treatment; an operation being generally found to be unsuccessful in the true diphtheritic cases.

I will here remind you of a circumstance which I have dwelt upon before, that many of the symptoms due to closure of the glottis arise not from swelling of the mucous membrane, but from paralysis of its muscles. When a muscle is inflamed it is paralysed, as witnessed in the case of diaphragmatic pleurisy, peritonitis, &c. Now, you must remember that the larynx is actually opened during inspiration, if it were not so it would close from atmospheric pressure immediately the chest expands. This does happen when the recurrent nerves are divided or compressed, and the same occurs when the muscles of the larynx are inflamed, as in croup, the organ being then to all intents and purposes a dead or passive larynx. Whenever, therefore, under these circumstances the child takes a more than usually deep inspiration, the glottis closes and he appears in danger of suffocation.

As regards *bronchitis*, you will find in the acute affection great dyspnœa, pyrexia, and expectoration of muco-purulent matter, together with the various râles heard in the larger tubes as before-named. In chronic bronchitis, it is not unusual to have the chest altered in shape, more especially if emphysema is present, becoming rounded in front and behind.

Capillary Bronchitis is a more formidable malady, constituting a very fatal form of disease amongst the old and infirm during the cold weather. The smaller tubes, especially those of the lower part of the lung are affected, and here we hear the subcrepitant rale; there is often no power of expectoration, or if there be any sputum brought up it is viscid and homogeneneous. The air can only penetrate a little way into these smaller tubes and consequently the lower parts of the lung remain unaerated; and when the patient breathes the upper part of the chest heaves, in which good health-sounds can be heard, but the lower part of the chest

remains motionless or even is drawn in during inspiration; there may be also some slight dulness on percussion. If a patient, therefore, have bronchitis, the less severe form is that in which the larger tubes are affected and rales are heard throughout the chest, whilst the worst form is the capillary bronchitis when the positive physical signs are few, but where the lower part of the lung becomes airless and collapsed and the patient suffers mostly from obstruction through the lungs.

Emphysema.—This is an expansion and breaking down of septa of the air cells, whereby the alveoli are thrown together and the aerating surface of pulmonary membrane becomes much reduced in extent. It may affect the whole lung or only parts. The latter is usually associated with bronchitis, and consequently the theories invented to account for it are of a mechanical kind. There is the *inspiratory* or compensatory theory. This has its foundation in the fact, that owing to the obstruction of a bronchial tube the portion of lung behind it becomes pumped dry of air, and collapses, and that in consequence of this another portion of lung expands to take its place. This, no doubt, is true, since it is observed in connection with the contraction of the lung which often takes place in the apex in phthisis; here the shrivelled lung may be seen surrounded by emphysematous bullæ. The *expiratory* theory is also founded on the association of emphysema with bronchitis, maintaining that during the violence of coughing, certain parts of the lung on which the pressure of the chest is least exerted, as for example, the apex and anterior border, give way and a rupture of the cells occurs. Even without any cough, if a great strain is put on the lung, as when the chest is expanded and the larynx closed in making efforts of straining, the lung will in some portions be apt to give way, and emphysema be produced. This is the explanation of the occurrence of emphysema in draught animals. The worst forms of emphysema, however, are those where both lungs are universally affected, and the naked eye sees on the surface of the organ the large dilated vesicles. The cause of this condition is intrinsic in connection with a degeneration of the pulmonary tissue, although the causes in operation to produce it are not very evident. The lungs are larger than normal, but do not contain so much aerasurface, and the chest is large and rounded. This is often called *hypertrophous* emphysema to distinguish it from the case where the lungs waste whilst the air vesicles undergo dilatation. Both organs are smaller in bulk and the disease is called *atrophic* emphysema. It mostly occurs in old people or in the subjects of premature decay, and together with the waisting of the lung, the chest becomes small and narrow, constituting the characteristic thorax of the aged.

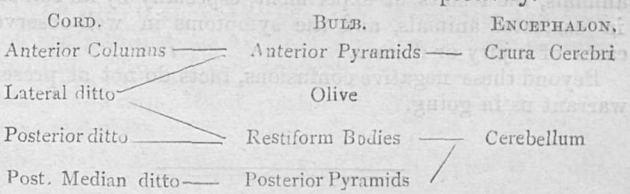
PHYSIOLOGY OF MOTION AND SENSATION.

By Dr. PYE-SMITH.

(Continued from page 28.)

Lecture VII.

What are the connections between the several centres of the Spinal system in its largest sense? The sensitive (afferent) fibres, after entering the cord cross over to the opposite side, and run up deeply till they reach the medulla oblongata (or bulb). Tracing the motor (efferent) fibres back, we find them still on the same side of the cord till they reach the bulb, when they cross over, so as to make the decussation of fibres seen immediately below the pons. In the bulb the grey matter is no longer arranged so regularly as in the greater part of the cord, and becomes exposed by the expansion of the central canal into the fourth ventricle, and the separation of the posterior pyramids, which pass on for the most part as the c. restiformia to the cerebellum. The anterior columns, after expanding into pyramids, and exchanging most of their fibres, pass upwards under the pons, like a stream under a bridge; and then part into the two crura cerebri, which become directly connected with the thalamus and c. striatum. The lateral columns are parted by the *olive* (an oval mass of grey and white matter of unknown function) as a stream might be by a rock in its current; and thence pass on to mingle with the anterior pyramids and with the restiform bodies respectively.



Little is known of the special functions of the encephalic parts of the spinal system. Certain collections of ganglion-cells known as "nuclei" in the *medulla oblongata* are supposed to be the centres for the (reflex) functions of the pneumogastric, and other nerves which appear to arise from them. These functions are only known by observations on the nerves themselves, and will therefore be considered with them, in a future lecture.

The *corpus striatum* and *thalamus* are clearly sensori-motor centres, directly continuous with those of the cord and bulb, and the former seems more especially to form part of the motor tract. Of the latter we can only say that it has probably no connection with sight, and the adjective *opticus* which has been given it is therefore best omitted.

The *Cerebellum* is a large double centre consisting of its two hemispheres, the azygos vermiform body and the great transverse commissure called by Varolius the Pons. Its functions are unknown. For this organ, as for others, the means of physiological inquiry lie in the following directions;—

(1) *Anatomy.* The presence of ganglion-cells, white and grey nerve fibres, and neuroglia, show that the cerebellum is a great nervous centre. Since it gives origin to no nerves, we cannot learn its function by experiments upon these. Its connections with other organs are the superior peduncles (*processus e cerebello ad testes*), which unite it with the optic ganglia (*c. quadrigemina*), and the inferior (*processus e cerebello ad medullam*), which are commissures between it and the bulb, and pass more to the posterior than the anterior columns of the cord.

(2) *Development.* The cerebellum appears in the fœtus subsequently to the cord and to the thalami, and somewhat earlier than the cerebral hemispheres. Like the rest of the brain it early attains to nearly its full size.

(3) *Comparative Anatomy.* It is present in all classes of Vertebrata, is rudimentary in the frog, and much more developed in mammals than in birds and reptiles. It is not relatively large in man.

(4) *Experiments*, When removed from pigeons Flourens found that they could not fly, although they were not paralysed. By applying electricity to the surface of the cerebellum Dr. Ferrier has recently produced movements of the muscles of the eyes.

(5) *Observation of the experiments by nature* in diseases, malformation, deficiency, or injury. Tumours in the cerebellum are not uncommon and are often accompanied with loss of sight, occipital pain, and unsteadiness of gait, without paralysis.

These facts, though insufficient and apparently contradictory, enable us to conclude with some probability that the cerebellum is unconnected with consciousness, volition or other intellectual functions; that it has no direct motor or sensory functions, and that it is more related to the cord, and especially its posterior column, than to any other part of the nervous centres. The "phrenological" hypothesis that it is the seat of the appetite (or the centre for the act) of procreation is conclusively negatived by its anatomical connections, its early development, its relative size in various animals, the results of experiment, especially by its full size in castrated animals, and the symptoms in well-observed cases of injury or disease.

Beyond these negative conlusions, facts do not at present warrant us in going.

STUDENTS' BIBLE CLASS.

The first meeting for the Summer Session will be held on Wednesday, May 13th, at 6.30 p.m., at Hibernia Chambers, London Bridge Subject: —Proverbs i. 20 33. The other meetings of the Session will be held each alternate Wednesday, instead of Tuesday a named on the card.

CRICKET CLUB.

At a meeting of the members of the Hospital Cricket Club, held in March, it was unanimously agreed to give up the old ground at Ladywell, and look round for a better and cheaper. The Club was fortunate in having an offer from Blackheath Morden Club to play on on their ground two days a week, viz., Monday and Wednesday, also our home matches for less money than we paid for an inferior ground.

On Saturday afternoon, Guy's Hospital II. Eleven commenced the cricket season by playing a match against Blackheath Morden II. on excellent wickets, and, considering it was the first time that most of us had "touched a bat" the play was very creditable, a good score being made for the Hospital. Unfortunately we had not time to finish. Score :—

Guy's Hospital.

W. G. Nash, b Pole	5
J. Reader, run out	16
H. Williams, b Prior	13
J. Boughton, b Pole	54
J. H. Earle, b Brockelbank	3
C. Collins, b Brockelbank	6
O. Edwards, b Gray	16
C. L. Mutch, b Gray	2
E. F. Ingram, b Pole	1
H. Liddell, b Gray	5
R. M. Harrison, not out	12
A. C. Kendall, b Gray	3
Byes 26, leg do. 3, wides 8, no ball 1	38
	175

Blackheath Morden.

Clarke, b Earle	0
Rodwell, c Earle, b Reader	2
W. Gray, not out	23
Pole, not out	9

Wrench, Finch, Prior, Brockelbank, Bailey, G. Spurling, A. Spurling, Shaw, to bat.

The nominal opening match was played on Wednesday. The muster was not nearly so good as was expected, many members being obliged to scratch at the last moment. Sides were chosen and large scores resulted, Power making a splendid 110 not out, and Gray a capital 63. Earle bowled very well. The wickets played very true.

MEDICAL WARDS

—o—

Cases admitted from April 30 to May 6.

BRIGHT

11—Asthma
17—Carcinoma of Stomach
18—Cephalgia
19—Morbus Cordis
28—Carcinoma of Stomach
36—Rheumatism
37—Acute Rheumatism
38—Psoriasis

PETERSHAM

8—Amenorrhea and Cardialgia
15—Ecyema

INTERNATIONAL MEDICAL CONGRESS.—The organisation of an International Medical Congress at Brussels in 1875, is being carried out with great activity. The president is to be Dr. Vleminckx, president of the Academy of Medicine, who has already presided over other scientific congresses with tact and authority. The Belgian Government has promised its co-operation, but it belongs specially to the members of the medical profession to set their shoulders to the wheel, in order to make the scheme work.

SURGICAL WARDS.

We are indebted to Mr. J. H. Poland for the following report of a case of

COMMINUTED FRACTURE OF SKULL.

S. P., æt. 22, was admitted into No. 13, Cornelius Ward, Feb. 12, 1874.

Family history good. Patient was in London Hospital two years and a half ago for injury to ribs. No other illness of any kind whatever. Present accident happened through a heavy iron weight falling from the top of a warehouse on to patient's head. He was picked up insensible and brought to the hospital immediately.

On admission—There is some swelling on the top of the head about the occiput's parietal region; in the centre of swelling is a triangular wound about 1½ in. in length. The wound admits of two fingers being passed in. There can be felt in the wound a comminuted fracture of the skull about ¾in. by ⅓in., the pieces of bone being forced down upon the brain; not much bleeding. Patient is rather cold and quite comatose. Pulse quick and very irregular. Pupils are dilated, but are sensible to light. Mr. Durham being present at the time decided on removing the pieces of bone. Operation (under chloroform).—Mr. Durham enlarged the wound with a scalpel about ¾in. each way, making three flaps of the skin and exposing the wound in the skull. The opening in the skull was now enlarged by breaking away three or four small pieces of bone which had been forced down upon the brain, now distinctly visible. Mr. Durham removed these; up to this time there had been little bleeding, but on the bone being removed two clots of blood gushed outand the wound bled freely. (The bone removed consisted of one large piece and several smaller pieces.) A sponge was placed in the wound and strapped over with lint and plaister. Patient had rigors after the operation.

Feb. 12—Is quite conscious and quiet, has but little pain *in the* head. Temp. 100·2, pulse 100, resp. 28.

Feb. 13—Is flushed, quite conscious, and can talk sensibly; pupils dilated, but naturally active; head rather painful; no paralysis; bowels have not been open since the 11th. To have Hyd. c. Cret. gr. ij., t.d.s.; milk diet. Morning—Temp. 100, pulse 90, resp. 21. Evening—Temp. 100·9, pulse 100, resp. 20. Is unable to pass his water, so Mr. Nunez drew it off with a catheter; is drowsy.

Feb. 14—Morning—Bowels opened freely; is unable to move his right arm, it is insensible to touch as far up as the shoulder; head very painful, is perfectly sensible; cannot pass his water without aid of catheter; slept a little last night; right side of face is expressionless; tongue dry and straight. Temp. 101·9, pulse 88, resp. 28. Evening—Can pass his water by himself; wound dressed for the first time, small clot of blood removed, there was but little bleeding, a pad of oiled lint was substituted for sponge. Temp. 102·1, pulse 104, resp. 36.

Feb. 15—Right arm still insensible to touch, but he can twitch it slightly; right side of face paralysis doubtful to-day. Morning—Temp. 103·5, pulse 112, resp. 38. Evening—Temp. 103·5, pulse 113, resp. 44.

Feb. 16—Head less painful; cannot move right arm, but it is sensible to touch as far as wrist; ice applied to head; there is partial paralysis of right leg, but it is quite sensible to touch. Morning—Temp. 103·5, pulse 107, resp. 26. Evening—Temp. 104·7, pulse 108, resp. 32.

Feb. 17—Slept fairly; has no trouble with his water; paralysis is the same as yesterday; a poultice is applied at head instead of ice; continues quite sensible. Morning—Temp. 103·3, pulse 104, resp. 36. Evening—Temp. 101·2, pulse 104, resp. 36.

Feb. 18—No alteration. Temp. 103·4, pulse 103, resp. 36.

Feb. 19—Has a slight cough; paralysis continues exactly the same; is sensible and quiet; head not very painful. Temp. 100·6, pulse 91, resp. 29.

Feb. 20—Ice is applied to head as it relieves the pain which has returned again; wound is dressed with carbolic oil and lint. Temp. 100·5, pulse 89, resp. 29.

Feb. 21—Temp. 100·9, pulse 90, resp. 29. Is quite sensible and quiet.

Feb. 22—No alteration. Temp. 101.1, pulse 90, resp. 29.

Feb. 23—Paralysis continues much the same as it was; patient is aphasic; face flushed. Morning—Temp. 101·1 pulse 91, resp. 30. Evening—Temp. 101·8, pulse 92, resp. 28.

Feb. 24—Patient is still aphasic; besides the right side paralysis there is some twitching in left hand and arm. Morning—Temp. 102·4, pulse 88, resp. 34. Evening—Temp. 102, pulse 72, resp. 32.

Feb. 25—No alteration, except every now and then patient moves his right leg spasmodically. Temp. 101·9, pulse 88, resp. 36.

Feb. 26—Patient quite unconscious; breathing quick and puffing; pulse irregular and very quick; pupils dilated and insensible to light; skin moist and hot; face flushed and expressionless, moves his right leg spasmodically at intervals; left side is paralysed, but there is twitching in left hand and arm; ice no longer applied to head; there is a slight discharge from the mouth of a white frothy mucous. Died at 9 p.m. Morning—Pulse 170, temp. 104·5, resp. 60.

Post-mortem—There was found a small hernia cerebri protruding through the wound. There was a large abscess in left frontal lobe, just behind the vertical part of the sylvian fissure. There was another smaller abscess nearly in the centre of the white matter of the cerebrum. The parts surrounding these abscesses were of a slightly yellowish colour. There was a large quantity of pus in the arachnoid cavity and also some, but less, in the subarachnoid cavity. The superior longitudinal tissues was uninjured. All the ventricles and rest of brain were normal (except the softness of parts round the hernia, the places described as abscesses were apparently originally tracts of punctiform ecchymosis, which had softened down). All other organs healthy except spleen, which was rather large and soft. Weight of brain, 49oz.; heart, 14oz; spleen, 11½oz.; one kidney (right), 8oz.

From April 30 to May 6.

ACCIDENT

3—Fractured Ribs and Emphysema, Fractured Pelvis
5—Abdominal Injury
19—Lacerated Wound of Leg
21—Ruptured Popliteal (?)
24—Severe Wound into Knee-joint
32—Cut Throat—Delirium Tremens

CORNELIUS

No Admission

LYDIA

3—Synovitis
7—Fractured Tibia and Fibula
16—Carbuncle
20—Carcinoma Mammæ
26—Run-over—Injury to Leg

MARTHA

14—Irritation of the Bladder
14—Diseased Hip

NAAMAN

No Admission

LAZARUS

5—Diseased Hip
6—Malignant Growth beneath Lower Jaw

JOB

3—Necrosis of Sacrum
7—Ulcer
10—Diseased Ankle
19—Large Abscess of Leg

LUKE

10—Ague—Spasmodic Stricture
12—Epithelioma of Penis—Amputation

DORCAS

No Admission

CHARITY

13—Lipoma of Back

APPOINTMENTS.

On duty during the month of May.

House Physicians—
Messrs. W. H. Jacobson and H. Ashby.

Junior House Physician—
Mr. H. Williams.

House Surgeon—
Mr. F. T. Paul.

Junior House Surgeon—
Mr. Ransford.

Senior Obstetric Assistant—
Mr. Clunn.

Junior Obstetric Assistant—
Mr. Hetley,

CORRESPONDENCE

—o—

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir, —Seeing last week the correspondence of "Edendum est ut Vivamus," in your paper, I thought that I might take the opportunity of also advising the "powers that be" of a greater necessity than a refreshment establishment, the want of which is dearly felt by all.

I am alluding to the absolute want of some place where students attending at the hospital can leave their coats, umbrellas, books, bags, &c., without the dire calamity of having them stolen. Scarcely any man goes through the whole of his curriculum without having at some time or other something purloined belonging to him. We are continually seeing notices in the window which will bear out this. A man comes to the hospital with his overcoat, his umbrella, and his book or bag, what is he to do with them when going round the wards? Unless he chooses to expose them to the risk of being stolen he must carry them about with him all day from one ward to another. Now, there are sufficient men at Guy's to warrant some expenditure being made in this quarter. Something ought to be done certainly, and that before next winter. What a splendid addition it would be to the numerous (?) comforts Guy's men have bestowed upon them if "the powers" would somewhere provide a room where the dressers and clerks could wait in the cold wintry weather, instead of shivering and shaking in the colonnade, waiting for the physicians and surgeons, some of whom are not always particular to half an hour, or perhaps a little more. Still, sir, we are only students, and perhaps catching two or three colds there during the winter may go some distance towards hardening us, or, as the more pedantic would say, augmenting the fortifications of the constitution.

But leave comforts alone, cut out luxuries, and thinking of necessities, a cloak room is above all other things needed at Guy's. The evil resulting from not having one is plainly illustrated by the number of thefts committed during the year.

I am, sir,
Yours truly,
Amicus.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The following Guy's men passed on May 1st:—

Mr. Perry
Mr. Phelps
Mr. Rowbotham

Mr. Charles James Davey of this Hospital has recently passed his Second M.B. Examination of the University of Edinburgh.

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Guy's Hospital Gazette.

VOL. IV.—NO. 6. SATURDAY, MAY 16, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

THE letters of "Edendum est ut Vivamus" and of "Amicus," which have recently appeared in our *Gazette* are, we think, on subjects too important to be allowed to pass by without notice. No person will, we imagine, be dissentient from the fact that what have been advocated in the letters are real necessities, at least with reference to the subject of the letter from "Amicus." It is with this that we would especially deal, although in so doing it must be understood that we do not in any way mean to insinuate that the subject of a Guy's refreshment room is one not worthy of attention, but, in our opinion, there is more urgent need of some waiting or cloak-room.

We regret sincerely that facts will not allow us to deny the assertion of "Amicus," with reference to the purloining of articles in the hospital. We cannot contradict it, all we can say is that it occurs too frequently, and as for speculating in any way whatever as to who may be the parties concerned in these dishonourable actions, we would rather be excused the task; all we can fall back on is the old adage of "it takes all sorts to make the world," and surely enough our hospital, or any large London hospital, is in itself a little world, and occasionally a circumstance will crop up which painfully reminds us that whilst we have the high, low, rich, poor, industrious, idle and honourable, we have also the dishonourable, mingling with the students of London, although happily rare, they still exist, and if it were only one to the thousand, sufficient mischief might be done by that one black sheep to create a feeling of insecurity amongst the rest. Be they who they may we would warn them that the ultimate result of a continued indulgence in the principles which now guide their actions will not be pleasing to contemplate if they are lovers of freedom. We would also tell them that with their acts, which they believe to be unknown, many are familiar, but they are spared the disgrace they merit, because they *nominally* belong to a class who are, and are acknowledged to be, gentlemen, and, therefore, they get treated with contempt and are detested as the veriest parasites that can infest a society. We are running away from our subject. It was our intention to discuss the subject of a cloak-room, and not enter into invective against the benighted beings whose misfortune it is to have no honest principles. "Amicus" advocates the establishment of a proper "cloak-room." What does this mean? We take it in this light. Some small room should be established after the fashion of a "left luggage" room on a railway platform, with an attendant, where a student on coming to the hospital could deposit his superfluous articles before going to study or fulfil his various duties; on depositing his articles he should receive some kind of ticket, by the production of which he would be enabled to withdraw them, the attendant to be responsible. Now this is, we must say, no more than is urgently needed, and we would recommend the subject to the authorities of the hospital for their consideration; it has been our duty to ascertain the general opinion upon the matter, and such opinion is, that what we have above suggested is the least that can be done for the students, if the authorities have regard for the honour of the institution and safety of the property belonging to the members of that institution. These things being so, it is our duty to call attention to them, as probably the facts that have been related by "Amicus," and unfortunately confirmed by our own experience, may never have reached the ears of the authorities before, or if so not nearly so often as they have occurred. It is only right that these matters should be properly ventilated and their remedy sought out. In suggesting, as we have, what really appears to be the only solution of the difficulty, we sincerely trust that we may meet with notice, as we feel assured that we are only echoing the opinions of the body of students connected not only with our own hospital, but with others also. May such echo receive attention, and Guy's Hospital will be benefitted by it!

LECTURES ON MEDICINE.

—o—

By Dr. WILKS.

DISEASES OF THE CHEST.

(Continued from page 35.)

PLEURISY.

I have already said that a slight pleurisy accompanies pneumonia in all its forms, whether the latter be lobar, lobular, or pyæmic; it may also be associated with apoplexy of the lung and other local diseases of the organ or it may be a complication of various constitutional affections, as Bright's disease. It is very probable that, as in the brain, there is an arachnitis pure and simple, and another arachnitis found in association with inflammation of the brain proper, so there is a pleurisy commencing on the costal surface of a simple nature, and another associated with a pneumonia and signifying a deep constitutional origin. In pleurisy, as in other inflammations, the products may consist of lymph, serum, or pus.

In an ordinary case of acute pleurisy, a very short time elapses before lymph is poured out, and this is found like a layer of butter spread over a portion of the lung and the surface of the chest; or the exudation may be more liquid or as serum contained in delicate fibrinous meshes. If the process continues, more fluid still is exuded, until the chest is full, and the product may now consist of various proportions of serum, lymph or pus, or be wholly serous or purulent. If this occurs, then besides the symptoms arising from the acute inflammatory process, there are the additional ones due to the presence of the fluid and its compression of the lung; if the fluid has been poured out slowly and insidiously, then the symptoms are entirely of the latter kind. It follows, therefore, that under the name acute and chronic pleurisy we have two very different diseases to deal with. The one is an acute inflammatory affection accompanied by considerable constitutional disturbance, the other a chronic disease where general symptoms are absent and local ones alone are present. We will take each case separately.

Acute pleurisy—The patient generally after exposure to cold or some violent exertion is seized with febrile symptoms and pain in the side. The intensity of this *pain* depends very much upon the site of the inflammation as corresponding to the degree of the mobility of the chest; for this reason a pleurisy at the upper part corresponding to the upper lobe, may be attended with little pain, whilst pleurisy at the lower part of the chest near the attachment of the diaphragm is attended with the most intense suffering. It will be found on examining the patient that the part of the chest corresponding to the site of the pain is *less moveable* than the other. This is due to a reflex action; we have no power of our own over the chest to prevent the painful side moving, but the result occurs by an involuntary reflex act; by watching the process of respiration you can see which is the affected side by its less mobility compared with the other. I have observed this in a patient lying insensible. If the diaphragm itself be involved, then there is still less mobility, as if every effort were being made to keep this muscle motionless. This is very important to notice, for the case may be one simply of diaphragmatic pleurisy, affecting either one or both sides, and where no auscultatory signs may exist. Here we must be guided entirely by the quick breathing and the immobility of the lower ribs. Another symptom very frequently present in pleurisy is a short dry *cough*. In all cases where the pneumogastric nerve is irritated, a cough may occur; it is sometimes one of the most troublesome symptoms and very difficult to treat. The *decubitus* or mode of lying is not of much importance to notice, as it may vary according to circumstances. I have seen patients with so much sensibility of the skin over the inflamed side that they could not bear the bed-clothes to touch it, whilst in others, owing to the acute pain occasioned by the respiratory movements, they have placed a pillow under the affected side and pressed heavily upon it On *auscultation* at the commencement of pleurisy, a to and fro *rub* may be distinguished, and if a thin layer of lymph intervene between the pleural surfaces, *ægophony* is heard when the patient speaks. If lymph be in any considerable quantity, the chest at that part is also *dull* on percussion. The general febrile symptoms are not so acute or severe as in pneumonia, the tongue not noticeably furred, nor the temperature so high. In a simple case these symptoms disappear in a few days and at the same time, the pain, dulness on percussion, the ægophony, and the other signs depart. The lymph is either absorbed, leaving the chest healthy, or remains as a permanent thickening of the pleura or what is more common, becomes organized, and binds together the lung and the chest wall.

If recovery does not speedily occur, but the effusion continues, the chest becomes full and the patient then begins to suffer from its presence. This fluid may consist of serum with more or less coagulable lymph or purulent matter. Not only may the chest be thus occupied by the results of inflammatory effusion, but the effusion may take place so quietly and unattended by so few symptoms, that we cannot say that inflammation has existed at all. Under all circumstances the results are the same, as regards the mechanical effects on the organs in the chest, although the character of the products varies under the different circumstances of their occurrence. If purulent matter be present, there will almost of necessity be considerable general disturbance, but if the secretion be purely serous, all constitutional symptoms may be absolutely wanting and the patient be brought to us with no other distressed feeling than shortness of breath. I say effusion may go on so quietly in the chest that the patient has no symptoms until the lung has become compressed and then he presents himself complaining only of shortness of breath. This may be, indeed the only symptoms complained of. He may have a short cough which he himself has scarcely observed and when you mention the circumstance to him, he may acquiesce in the statement that he can only lie on one side, the *decubitus* in pleuritic effusion being necessarily on the affected side.

Pleuritic Effusion— Since the physical signs are very much the same in all cases, irrespective of the character of the effused fluids and the mode in which they have been formed, we may advantageously take all cases together, and first speak of the physical signs which inform us of the presence of fluid in the chest. No more important case of disease can attract your earnest attention than this, for the ability to ascertain the presence of fluid in the chest may enable you to save a fellow-creature's life, whilst ignorance of the diagnosis will let you stand by and see him die before your eyes. It is for this reason that questions referring to pleuritic effusion and its removal by operation are amongst the most favourite ones amongst examiners, and yet I am sorry to state that satisfactory answers are by no means common.

The reasons for this are that when a student is asked what are the physical signs of pleuritic effusion, he immediately thinks of some of the more striking auscultatory names which he has heard, and then having his mind fixed upon the picture of fluid, he gives random and absurd answers about fluid splashing, and the chest bulging, &c. He is thinking of some positive signs to prove its existence, whereas the signs are really *negative*, and this is the reason they are not impressed on his memory. In health the chest expands, but when the lung is compressed it does not expand. there is *immobility*. In health a respiratory sound is heard, in pleuritic effusion there is *no breath sound;* in health the chest is resonant, when full of fluid it is *dull;* in health there is tactile vibration when the patient speaks, when the lung is compressed by fluid *tactile vibration is absent*. These three negative signs are in themselves almost sufficient to prove the existence of effusion, (1) absence of breath-sound. (2) dulness on percussion, (3) absence of tactile vibration, To this may be added the immobility of the diseased side. If the fluid should still further increase in quantity, then additional symptoms are present, for not only will the fluid displace the lung, but it will forcibly expand the chest, rendering it much larger than it even is in the most forced inspiration. Under these circumstances the chest may be larger on the affected side, and sometimes the intercostal spaces are on a plane with the ribs, but do not often bulge out; if a bulging is seen at any spot, it does not often arise from the simple pressure of the fluid within, but from the fluid being of a purulent character, and its making an effort to escape by the setting up of an inflammatory process in the walls of the chest. Then, again, the presence of fluid is made known by its mechanical pressure on the surrounding parts, and more especially on the heart, and thus if the effusion be on the left side, the heart may be so encroached upon as to be pushed over to the right side, where the apex may be felt beating. The pressure on the heart may be one cause of its increased action. Then, again, from the diaphragm being pressed upon the spleen, may be forced down on the one side or the liver on the other. This cause for descent of the liver should be remembered as it has sometimes been ignorantly looked npon as enlargement of the liver. As a consequence of the complete compression of the lung, the other lung is doing all the work, and well-marked supplementary breathing is present. I warn you, therefore, against saying that a splash is heard in effusion of the chest, for it is impossible without the presence of the air, and I would advise you also not to say that the chest is larger and the intercostal spaces bulge, for these signs are only present in exceptional extreme cases, and it is long before these occur that your patient's life is in jeopardy and you may do something for his relief. Then, again, you often say that you know the presence of fluid by the fact of the lung floating about in it, and thus you have resonance or dulness on the front or back of the chest according to the position of the patient. Now, I would ask you not to rely on any such physical sign, and, indeed, it is impossible to occur in conjunction with bulging of the chest, for long before this could occur, the lung would be compressed into so small a space that it could not possibly float to the front or back of the chest from alteration of position. As a matter of fact, this variation of dulness or resonance by position of the patient is not at all common, and is almost worthless as a sign of pleuritic effusion. The lymph is thick and will not allow the lung to move in the manner supposed, as you may any day prove by examining a patient who has pleurisy at the anterior part of chest, when you will find it dull on percussion, whilst the posterior part preserves its resonance. It is only in exceptional cases when serum is perfectly clear and thin that this alteration from change in position can occur, and rarely indeed in pleurisy; it is rather in cases of passive effusion or hydrothorax, occurring in heart disease, that you meet with it.

Now, the next thing to ascertain, if possible, is the character of the fluid effused, whether it be serous or purulent; because if the latter, it will not be absorbed, but must make its exit. whilst the former can be removed by remedies. Now, a great difficulty lies in determining this question, since there are no physical signs to aid us. We must be guided by probabilities, gained from a consideration of the physical symptoms. For example, if a patient have acute pleurisy, and shortly afterwards the evidences of effusion are present, we are bound to believe that the matter effused consists of lymph and serum. So, again, if the effusion have come on insidiously, but the patient is able to walk about and is not ill, it can scarcely be supposed that the fluid can be anything but simple serum. If, however, the patient has been ill for some weeks, and he has become thin, his health impaired and at the same time, has hectic symptoms, there can be little doubt that he is the subject of purulent effusion or empyema. Cases, however, are constantly met with, where, until parancentesis is performed, we are quite ignorant of the quality of the fluid. The question is one which it would be advantageous in every case to answer, because the treatment very much depends upon our decision. If we believe purulent matter is present, the rule is to evacuate it, for it is useless to look for absorption, this occurring only as a very rare and exceptional occurrence. If the matter be not removed, it will find a channel for itself, either through the chest-walls or through the lungs and bronchial tubes; but we prefer not to allow it to remain, in the chance of its taking either of these courses; I mean it might make its escape into some other channel with very hazardous results.

PHYSIOLOGY OF MOTION AND SENSATION.

BY DR. PYE-SMITH.

(Continued from page 36.)

LECTURE VIII.

Passing now from the Spinal Centres, there are four encephalic organs to be noticed before considering the functions of the Cerebrum proper.

Two of these, the *Conarium* or Pineal body, and the *Hypophysis* cerebri, or Pituitary body, are of great morphological importance from their constancy in the Vertebrate series, and because the former marks the division between the mid-brain and fore-brain in an early period of development, and the latter is always just in front of the notochord. The latter latter received its older name from the belief that it was a gland, and the infundibulum secreted phlegm which trickled

through the sella turcica to the pharynx * The functions of these two organs cannot be even conjectured, and it is quite possible that they do not belong physiologically to the nervous system at all.

The other two organs have well-ascertained functions. The *olfactory bulb* or *rhinencephalon*, is the centre of the sense of smell. This is proved by its connection with nerves which we know to have this function and with no others, throughout the vertebrate series. Its so-called peduncle is simply a commissure connecting it with the hemisphere of its own side, and is absent in some fishes, the olfactory ganglion being then sessile.

The *Corpora Quadrigemina* give origin to the optic nerves; and this relation being constant in all vertebrate animals but a few fishes, they have been naturally called the optic lobes. This view of their function, however, it is right to add, has not up to the present time, been confirmed by pathological evidence in man, nor by conclusive experiment on animals.

The centre for the acoustic nerves is not a distinct ganglionic mass, but only a nucleus of grey matter in the floor of the fourth ventricle, close to the median line, and half-way between the angle of the posterior pyramids and that of the superior peduncles. The centre for taste is less certainly determined, and those for the remaining senses (touch, pain, &c.) are still unknown.

The only central organ which remains for us to consider is the *cerebrum* proper, the Hemispheres. It consists of two great sheets of grey matter, each forming a complete hollow sphere (except where it is attached to its fellow by the c. callosum, and to the sides of the c. striatum and thalamus), filled with white (commissural) matter, and crumpled down into folds so as to pack into tho skull, just as I pack in these two cloths. Or, looking especially to their development, we may compare the hemisphere to two mushrooms attached by their stalks to the soil from which they grow side by side, and gradually overarching it, until they fill an oval dome which covers them; then, still growing, they meet each other and press their opposed sides flat, and lastly squeeze their surfaces into a wrinkled pattern.

The first question as to the function of these enormous ganglionic masses, is whether they form a single organ, as the two kidneys or the two lungs are physiologically one, or whether each hemisphere has its separate office, like the two eyes or the two hands. The next is, whether the several parts of each side have individual functions. Both questions will probably one day be answered in the affirmative, but at present we have no certain knowledge on these points.

Of the general function of the Cerebrum there can be no doubt. We have seen that the rest of the nervous system is the seat of (1) all sensations, special and common, (2) all movements not distinctly volitional, and (3) all reflex functions. The mental endowments—memory, consciousness, will, emotions—have no other organ but the cerebrum, and the cerebrum has no assignable function if these do not belong to it. Moreover, we find that in Fishes (which we may assume to be less intellectual than ourselves) the hemispheres are represented by these two lobes, smaller than those of sight, or those of smell. In Birds the cerebrum is, you see, much larger, and still more so in rabbits and hedgehogs, but it is either perfectly smooth, or only a few wriukles show that the spheres of grey matter are becoming larger than the cavity which contains them. In larger animals like the cow, and intelligent animals like the dog, you see the convolutions are numerous. In this monkey's brain they are more so, but it is only in man that they obtain their full number and complexity.

Again, looking at these figures of the fœtal brain, you see it is smooth at first like a rat's, and gradually becomes more convoluted, as we may suppose the organ of the mind to be developed. The cerebrum is nearly of its full size when the child is seven years old, and very gradually increases in weight from that time up to middle life. We must therefore suppose the physical organ of the mind to be constructed long before its entire functions are needed or possible; and probably the brain of every man is capable of performing more elaborate functions than he asks of it. You may run up your bookshelves in a few weeks, but it takes years to furnish a library.

The same train of thought is suggested by the results of experiment and disease; for though complete removal of the hemispheres in an animal reduces it to the condition of profound sleep and abeyance of all voluntary movement and apparent sensation, yet you will have occasion to see many cases in which these endowments will be seen to be unaffected by the destruction of considerable portions of the cerebrum. The explanation seems to be that we have all of us more brain than we use, and therefore the loss of part, especially when so gradual as not to produce vascular disturbance in the remainder, may be suffered without apparent symptoms. It is just what we see in diseases of the chest where a man may gradually lose half his lungs and yet breathe pretty well.

General wasting of the grey matter of the hemispheres leads to the imbecility of old age; general arrest of development, to congenital idiocy. And, every night, the more or less complete abeyance of cerebral functions, which constitutes more or less dreamless sleep, is the consequence of anæmia checking the active life of its ganglion cells. This is proved by phenomena of fainting and hæmorrhage, by the actual inspection of the brain in animals during sleep made by Mr. Durham and other observers, and by the anæmia of the optic disc noticed by Dr. Hughlings Jackson in human beings asleep.

* By this third Cave, the humid City drains
Base noisome streams, the milky streets annoying,
And thro' a wide-mouthed Tunnel duly strains,
Unto a bibbing substance down convoying;
Which these foul dropping humours largely swills,
Till all his swelling sponge he greedy fills,
And then, thro' other sinks, by little soft distils.

Ph. Fletcher's "Purple Island," v. 17.

GLEANINGS FROM OLD SAVANTS.

Says Dr. Pouchett, "There is as wide a difference between the bulk of the tiniest representative of the microscopic world and its largest as there is between a beetle and an elephant."

Nothing is more marvellous than the organisation of these beings, and if it were not for the thoroughly established facts people might suggest fiction as a relief to their astonishment.

A single microzoon has no weight practically speaking. A whale, on the other hand, may weigh 100 tons. Yet the

profusion of apparatus in the microzoon sometimes exceed that which is seen in these large animals. Some of the microzoa have fifteen or twenty stomachs; in addition to this there is in some infusoria an apparatus of extreme delicacy, which can be seen moving through the transparent body moving and crushing food.

Notwithstanding the extreme minuteness of these creatures, Nature has carefully sheltered them—some beneath a calcareous shield, others under a carapace of silex.

According to Ehrenberg, some of the infusoria have eyes. If we could suppose organs of such minuteness possessing a field of vision large enough to see us with the instrument by which they are observed, what a terrific impression we must make upon them when they see themselves in our hands.

Again, many of the animalcules have cavities and fluids in their interior corresponding to the heart and blood of a larger animal, and this circulatory system in some is so proportionately large that it is stated some microzoa have hearts fifty times as large and as strong in proportion as that of a horse.

If the wonderful organic perfection of these living corpuscles surpasses all our preconceived ideas, their perpetual activity affords no less ground for astonishment. The life of all the larger animals is made up of alternate action and repose, of movement which wastes the forces, of rest which restore them. But not so in the case of the microzoa. Ehrenberg, who has watched their movements carefully by night and by day, has found them always moving, so that he described them as the emblem of incessant agitation. Even plants, exhausted by life rising unseen through its tissues, sleeps at the close of day. The microzoon, notwithstanding its excessive activity, does not.

Struck by this fact, Professor Owen has conjectured that this extraordinary activity might be due to the enormous development of the digestive system in the infusoria, seeing that a man, a lion, or a tiger has only one stomach, an ox or a camel four or five, whilst the invisible microzoa in some cases has a hundred.

In proportion as science has been perfected the horizon of life has been enlarged, and a microscopic world full of animated existence has been revealed in every spot to which investigation has been able to reach. The polar ices the elevated regions of the atmosphere, and the depths of the ocean are peopled with living organisms, and everywhere their prodigious concentration astonishes one as much as the variety of their forms.

If the beautiful discoveries of naturalists had not fully established the fact it would have been difficult to have believed that in some of them there is more vital resistance than in the most vigorous animals, Where the severity of the climate kills the most robust of the vegetable world, where a few scattered animals pick up a precarious subsistence the delicate organism suffers nothing from the most terrible cold that has ever been experienced.

Sir J. Ross brought more than fifty different species from off the icebergs of the polar seas, and some of these organisms arrived in full vitality at Berlin. They have been discovered at a depth of 12,000 feet, where the pressure would be about 375 atmospheres, which the gelatinous body of infusorium resists in a marvellous manner.

The phosphorescence of the ocean, of the sea, is due to the presence of myriads of animalcules, the medusæ, the physophoræ, and noctilucæ, all taking part in the production of this phenomenon.

According to Humboldt, each bed of the ocean is peopled with these microzoa, which rise under the influence of certain meteorological changes, and form vast sheets of luminosity on the surface of the water.

Water has at times been observed to turn red in colour, and this is due to infusoria. M. Morren says there are about forty species capable of communicating this red colour.

When Ehrenberg was encamped on the shore of the Red Sea, near Mount Sinai, he had the good fortune to find this sea tinged red to which from remote antiquity it has owed its name. He observed a gelatinous material deposited on the shore, and this, when examined under the microscope, was found to consist of an accumulation of a single microscopic alga, the Red Trichodesma, the sole cause of this celebrated phenomenon.

ROYAL COLLEGE OF SURGEONS.

The following were the questions given at the Primary written examination on Saturday, May 9th :—

1. Describe the Lacrymal Gland, and the anatomy of the structures conducting tears from that gland to the nose.

2. Describe the mucous membrane of the Duodenum, and the changes the food undergoes in its passage through that portion of the intestine.

3. Give the relations of the Quadratus Lumborum Muscle, in front and behind ; and give its attachments.

4. What is the normal Temperature of the blood ? How is that Temperature maintained ?

5. Give the relations of the Supra-Scapular Artery. and its anastomoses. Note the dissection necessary to expose it.

6. Describe the Radius, giving the precise attachments of the muscles and Tendons, and their relation one to the other.

The following Guy's men passed on the 12th inst. :—

Mr. McCarthy
Mr. Gilbert

The following Guy's men passed on the 13th inst. :—

Mr. Instone
Mr. A. M. Turner
Mr. M. P. Turner
Mr. A. W. Green
Mr. C. P. Creed
Mr. Malpas
Mr. Paddison

Mr. A. M. French is appointed House-Surgeon to the Lincoln Dispensary.

MEDICAL WARDS

—o—

New cases admitted from May 7 to May 13.

JOHN (Clinical).

4—Cerebral
6—Abdominal Aneurism
8—Pleurisy—Pericarditis—Endocarditis
9—Alcoholism
10—Hemiplegia

MIRIAM (Clinical).

20—Morbus Cordis
28—Intussusception
29—Ascites—Tapping
32—Psoriasis ?—Specific ?
33—Pleuritic Effusion
34—Intestinal Obstruction

MARY

11—Phthisis
12—Morbus Brightii and Morbus Cordis
21—Morbus Cordis
23—Hysteria and Chorea

ADDISON

No admissions

5—Phthisis
31—Gonorrhœal Rheumatism
34—Mitral Bruit—Fatty Heart (?)
40—Phthisis
43—Pleurisy
44—Ague

SURGICAL WARDS.

—o—

New cases admitted from May 7 to May 13.

ACCIDENT

8—Compound Depresssed Fracture of the Skull (right side)—Operation—Arachinitis—Aphasia—Hemiplegia
12—Head Injury
13—Fractured Fibula, with wound of Leg

CORNELIUS

7—Fractured Tibia and Fibula
10—Both Hands Crushed
12—Compound fracture of Tibia and Fibula
16—Fractured Tibia and Fibula
17—Injury to Head
18—Fractured Femur

LYDIA

10—Epithelioma of Œsophagus
20—Contraction after Burn
23—Ecthyma

MARTHA

13—Anchylosis of Ankle-joint
16—Diseased Knee
20—Sprained Ankle

NAAMAN

8—Fistula in Ano
10—Diseased Ankle
12—Cleft Palate
14—Synovitis
14—Inguinal Hernia—Reduced
17—Inguinal Hernia—Reduced
18—Stricture
21—Injury to old diseased Knee-joint—Amputation

LAZARUS

No Admission

LUKE

10—Ague—Sciatica—Spasmodic Stricture
14—Diseased Ankle

DORCAS

4—Wound into Knee-joint
5—Femoral Hernia—Reduced
8—Injury to Vagina—Labial Thrombosis
9—Fistula in Ano
12—Burn
15—Tumour of Face
18—Large Nævus on Cheek
20—Compound Fractures of upper and lower Jaws, with Comminution of Nasal and adjacent bones
24—Lacerated Wound of Knee

JOB

2—Diseased Hip
2—Necrosis of Femur
7—Ulcer on Leg—Rheumatism

CHARITY

6—Sprained Shoulder
19—Psoas Abscess

CRICKET CLUB.

On Thursday last, Guy's I. Eleven played at Ladywell against Lewisham, and won on first innings by 86 runs ; had time allowed, in all probability they would have scored a victory by 10 wickets. For Guy's, in the first innings, J. Mackern bowled splendidly, and was wel backed up by Earle. Boughton, Lewis, and Earle batted well. G. Power played a good innings for Lewisham in their second venture.

Lewisham.

	1st Innings.		2nd Innings.	
G. Creswick, b McKern	2	c Manser, b Reader	1	
W. F. Openshow, c McKern, b Earle	5	c McKern, b Kendall	9	
G. Power, b McKern	1	not out	73	
W. H. Power, b McKern,	0	c Lewis, b Reader	0	
J. A. Fisher, c and b Earle	4	b Reader	2	
J. Knowles, c Lewis, b McKern	0	thown out	21	
B. Noakes, c Liddle, b Earle	0	b Wallis	0	
J. Johnson, b Reader	25	c Earle, b McKern	3	
Layman, run out	0	hit wicket, b McKern	9	
Clarkson, c Boughton, b McKern	7	b Kendall	7	
F. C. Power, not out	0	b Kendall	1	
Byes	1		3	
Leg Balls	0		1	
Wide Ball	0		1	
Total	45		131	

Guy's.

T. A. Lewis, c Johnson, b S. Fisher	7	not out	25
H. Williams, b T. Fisher	13		
J. McKern, c and b W. Power	6		
J. Boughton, not out	55		
P. E. Wallis, c and b T. Fisher	2		
J. Reader, b W. Power	2		
J. H Earle c Knowles, b W. Power	25		
R. Manser, b W. Power	5		
Liddell, c Johnson, b W. Power	8		
Kendall, c G. Power, b W. Power	0	not out	11
Byes	5		0
Leg byes	0		2
Wide balls	2		3
No ball	1		0
Total	131		41

ED. G. H. G.

The next match will be played on Monday, May 18th, at the Oval, v. Surrey Club and Ground.

Gentlemen are reminded that subscriptions to the Cricket Club are now due. The Secretary would feel obliged by members paying their subscriptions (10/6 playing, and 5/- honorary) as soon as convenient.

COMMUNICATIONS RECEIVED.

Messrs. W. Phelps, H. R. Ker, and J. Boughton.

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Guy's Hospital Gazette.

VOL. IV.—NO. 7. SATURDAY, MAY 23, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

ALL people will agree that to *see* anything done is widely different from *doing* it. No man, no matter how often he may have witnessed any operation will, unless he has performed that operation himself, feel that he is thoroughly competent to carry it out by himself, or should his self-confidence lead him to attempt it he will find that he is not so familiar with all as he might have reasonably expected he would be, and he will also find that when he has the full responsibility upon his own shoulders these things have a different aspect, and circumstances are widely altered from those which surrounded him when, although perhaps an assistant in, he was virtually a spectator of the operation. Although at sight things appear easily done, they are not so in reality. The practised hand of the surgeon, the steadiness and deliberate method of action, the simple manner in which he makes his incisions, &c., are the result of thorough knowledge of his profession, and that's only half what they proceed from, the other half is to be found in the *practice* they have had. Just stand at the end of a piano and see the simplest of pieces performed in the slowest time; added to this you shall have a thoroughly sound knowledge of the theory of music. See the piece played as many times as you please, and then sit down and try it yourself; how far would you get? You would find undoubtedly that seeing and doing are not by any means the same. Knowledge is good and is indispensable, but there is also something else that is good and indispensable too—*practice*. Who would ever attempt to deny such? The simile we have drawn may appear as an exaggeration of a truism, but it is not an exaggeration; there is as wide a difference between the theory and practice of the one art—Music—as there is of the other—Surgery. How should a man perform either lithotrity or lithotomy if he has never had an opportunity of becoming acquainted *practically* with these operations. He might at an examination describe very prettily all the steps of the operations either in the written part or at *viva voce*, but put that man into practice and ask him to perform one of those operations, and the probability is that it would be the source of much anxiety to him and might cost his patient something more than anxiety. We would venture to say that it is probable a man with a thoroughly good knowledge of his anatomy and of the variety of descriptions of the numerous operations in Surgery will find himself considerably non-plussed when he is placed face to face with practice, and finds himself called upon to perform some operation which, although common in any large London hospital, it has never been his lot to become practically acquainted with. With some the difficulty would be much less than with others, but with all there would be wanting that upon which success in surgical practice so much depends, namely, coolness and accuracy. Regarding *all* operations that are going on at different times in our hospital it is really out of the question that students should even be permitted to perform them under the most distinguished guidance, and even though the student be himself qualified in Surgery, still all ought at least to have the opportunity of *witnessing* such an operation as ovariotomy before leaving the hospital; but this is not so, it is only by chance that a man in the ordinary way gets to see such, and to the one man who has seen ovariotomy before leaving the hospital we may say there are two who have not. This assertion is not based on nothing; to the contrary, we have gone to the trouble of ascertaining this, and we are able to give it as authentic. We may be here met by the accusation of having failed to avail ourselves of the opportunities held out by our *Alma Mater* for study and practice; but this will not apply in the least, for we may say that men particularly anxious and zealous in the acquirement of knowledge have stated to us the above as a grievance, they have lacked an unenviable element of character, and through fear of intrusion (to put it mildly) have failed in their desire to witness the operations, and becoming as far as practicable acquainted with them.

We will resume the consideration of this in our next issue.

LECTURES ON MEDICINE.

By Dr. WILKS.

DISEASES OF THE CHEST.

(Continued from page 43.)

PLEURITIC EFFUSION.

Treatment and Cure.—As regards treatment, therefore, if we have made up our minds that pus is present from the continuance and severity of the symptoms, we immediately adopt means for its evacuation. In what other cases you may ask do we adopt similar measures? Why, secondly, we tap the chest when the presence of the fluid is endangering the life of the patient. If you are called in to see a patient and find him gasping for breath, and discover that one lung is compressed by fluid, and the other lung, as well as the heart, encroached upon, you have only one duty to perform; and that is, to tap his chest. You need not wait to enquire about the history and symptoms in order to gain knowledge as to the character of the fluid, but you set about removing it. A third reason for tapping your patient is, that when he has long been under treatment and no impression is made on the fluid, you then remove it by instrumental means. Here are, then, three cases or three different occasions in which the profession is agreed upon the necessity for operative interference,—the urgency of the symptoms, the probable purulent character of the effusion, and the not yielding to simpler means. The only case which remains for discussion is that of the recent and moderately acute pleurisy; now here, all are not agreed as to the advisability of paracentesis. It is somewhat a question of fashion, and comes in and goes out like other fashions. When I first knew Guy's Hospital paracentesis thoracis was coming into vogue, and a capital paper was written on the subject, and now to be found in the Guy's Hospital Reports, by Mr. Cock and Dr. Hughes; after a time it came into disuse, it was then again revived; a second time came into abeyance, and is now again being very commonly practised; a further reason, however, for this at the present time is to be found in the improved method of operation and the invention of the exhausting syringe.

If tapping is not had recourse to, we adopt the measures which have always been in use, and by this method you may observe in many cases that the fluid is absorbed. There is, indeed, a tendency for absorption to take place if the patient comes into hospital and be kept on low diet. A young man, for example, comes into the hospital having had no very severe constitutional symptoms, but his chest is found full of fluid; he is kept quiet and has not much given him to eat and drink, and absorption quickly takes place. As a rule, however, we give him physic, as for example, a diuretic saline, perhaps acetate of potash with iodide of potash, and small doses of mercurial. At the same time we apply counter-irritants to the chest, and we prefer the iodine liniment; it blisters the chest, possibly promotes absorption and at the same time does not interfere with our auscultatory explorations. I believe, myself, the treatment is useful, judging from such a case lately in the hospital, of a man who had effusion for three months, and which entirely disappeared under this plan.

Now, if these measures are unsuccessful we tap the patient; if the fluid be serous and the lung not bound down, it will expand and drive the fluid out, or we may use a syringe and draw off a certain amount of fluid, leaving the rest to be absorbed. If, however, the fluid be purulent, we often have to adopt a different method; under these circumstances the lung is coated with lymph, preventing the organ from expanding, or from its long compression the tissue itself has undergone a change; there is no hope, therefore, of the lung again being restored, and our only object is to get rid of the purulent matter. If this were universally true, the line of practice would be simple, but there are cases occasionally met with, especially in children where the exudation has been of a purulent character and yet the lung expanded well on the removal of the fluid by a syringe. In spite of these exceptional cases, I am not sure whether better success would not upon the whole be obtained if they were altogether discarded, since the adoption of a method which hopes in every case for a restoration of the lung has been hitherto attended with such unfavourable results. For example, the method at one time was of this kind, to wait until the chest became enormously enlarged and the patient in danger of suffocation, when a trocar was put in the chest and some pints of pus removed; this amount, however, was only the superfluity of the contents of the ordinary sized chest; it had become not only full, but distended, the purulent matter occupying the mediastinum and parts which are not usually filled with lung. It was this superfluous part which was removed, relieving the patient from the undue pressure, but leaving his chest full. After a short time a further secretion took place, productive of the same symptoms, when the trocar was again had recourse to with a temporary relief for the second time; for a third and fourth time the operation was repeated, when the patient at last died, and on post-mortem examination the chest was found full of pus, and much in the same state as when the patient first entered the hospital. Now, having seen several such cases, it is sufficiently evident that the lung has very little chance of recovering itself in a case of empyema, and yet this is what we are hoping for. If, then, the lung is irretrievably bound down, it is impossible for the fluid to escape without letting the air in, as impossible as it is for beer to flow from a barrel without the introduction of a vent peg; under these circumstances the practice has been of late years either to evacuate the contents of the chest by letting the air in or let the matter slowly escape while the chest contracts upon it in the ordinary process of cure. If it could invariably be said that wherever purulent matter escapes on tapping, the severity and duration of the disease have irrevocably spoiled the lung, such a practice as I have named might be recommended to be invariably followed, but since occasionally in young persons the lung is capable of recovering itself, we try the effects of withdrawing the fluid by means of a syringe.

This is what you first attempt; if the lung does not expand and the fluid again collect, then you must introduce a drainage tube. This is done in various ways. For the introduction of the trocar we choose a position at the side of the chest, between the fifth and sixth rib, and between the digitations of the serratus; you are told to pass the instrument along the upper side of the rib, so as to avoid puncturing the intercostal artery; I don't think this direction is much followed, as there is often only just space sufficient for the introduction of the trocar; but I have known the artery wounded with much hæmorrhage into the chest. After removing the trocar you may thrust into the hole a piece of

india rubber piping, and allow the other end to fall into a vessel of water; the matter will thus gradually run out. Another operation is to make two openings and pass a piece of perforated pipe between them. The first method of allowing the pipe to fall into a vessel of water is now very commonly adopted, for if the lung is capable of expanding, the dilatation gradually goes on as the pus drains out and a perfect recovery may take place; but if the lung should be incapable of expansion, then as the matter escapes, the chest falls in and a cure is effected at the expense of a damaged lung. The same process occurs when the matter is self-evacuated by making its way through the chest-walls; a cure can only be completed by the chest-wall falling in to grow to the lung, and the process is naturally a very long one. In the case of an abscess in the soft parts, the surgeon can compress its sides after the evacuation of the matter, but an abscess in the chest having bony and unyielding walls, will go on secreting matter into the hollow which has been emptied, and the process will continue for many months until the cavity has completely contracted. This method of letting the matter run through a tube or a fistulous opening in the chest is not always sufficient to relieve the patient, and I have now seen several lives saved by the adoption of bolder measures. It happens sometimes that the patient is really suffering from the presence of a large quantity of purulent matter in the body and the drainage tube does not readily enough assist its discharge, we must then open the chest and allow the matter to escape as in the case of any other abscess. A most striking case of this kind was that of a boy lately in the hospital; coming in with empyema, paracentesis was performed, some matter evacuated, and a drainage tube put in the chest; a slow and constant flow took place, but not sufficient to relieve the patient for any length of time, for he sank into a febrile or hectic state, with quick pulse, loss of appetite, and such increasing debility that it was evident his days were numbered. Under these circumstances I proposed to let the matter out by a free opening, and I called in consultation my colleague, Mr. Durham, who seeing the dying state of our patient, thereupon made a long incision in the chest; immediately the air rushed in and the matter gushed out; a quantity of carbolized water was then pumped in and the chest completely washed out; this was done every day. The improvement was instant and most remarkable; in three days the temperature was reduced to normal, and the appetite had returned. In a few more days the lad had left his bed, and very soon was walking about the hospital. It was interesting for the students to examine his chest, for of course when percussed it sounded like a drum. After being in the hospital some time, and it being found that the chest was slowly contracting, he was allowed to leave the hospital and perfect the cure himself, he having been taught to wash out his own chest; he would place a funnel in the fistulous opening and then pour water in, turning on his side it again ran out, and so the cavity was cleansed. About the same time we opened a woman's chest where the drainage tube was ineffectual in relieving the constitutional disturbance. In her case, as well as in the young man's, I have no doubt that her life was saved by the operation.

You will see, then, what are our operative procedures 1. In all cases where life is threatened you perform paracentesis. 2. In all cases of long standing effusion where ordinary measures have failed. 3. In all cases where you suspect purulent matter. Whether you should do it in more recent cases, where the symptoms are not urgent, is the only question still open in the profession. Since we have had a good exhausting syringe, I have certainly done it more frequently than heretofore, but I cannot recommend its use indiscriminately in all cases, seeing that rapid recovery may often take place without any operative measures whatever.

If purulent matter be present in the chest, and you do not evacuate it, it will spontaneously burst its bounds and escape; it may take a course injurious to life, as into the pericardium or into the abdomen, but most usually it makes its way through the chest externally or internally through the lungs, the latter is the mode which is followed by the best cure. If it passes through the chest-wall it excites inflammation in the parietes, an abscess forms, which opens, and so allows the matter to escape. It is worthy of remark that although we may tap the patient low down for the sake of safety, yet that Nature prefers the upper anterior part; thus you will see the natural fistulous opening more commonly in the front and upper part of chest.

If the matter be evacuated through the lung there may be no previous warning, but the patient suddenly coughs and ejects some pints of matter. This may continue for some days and weeks and complete recovery ensue If a large tube be opened it may happen that air escapes into the chest, and then we have a pleuro-pneumo-thorax to deal with; known by the physical signsbefore mentioned; the metallic sounds on coughing and the splash on succussion. It is a remarkable circumstance that sometimes on post-mortem examination of cases where evacuation of matter has taken place through the lung no opening can be discovered, and this suggested to my late colleague, Dr. Barlow, the possibility of a rapid secretion taking place from the bronchial membrane, of matter whose pabulum was supplied by the pus on the outside of the lung. The fact has often been observed that after paracentesis and pressure removed from the lung, a bronchial secretion will immediately occur, showing some connection probably between the stagnation of blood in the lung and the secretion from the bronchial membrane. You may remember that the simplest, safest, and most effectual recovery occurs through the natural evacuation of pus through the lung.

PHYSIOLOGY OF MOTION AND SENSATION.

BY DR. PYE-SMITH.

LECTURE IX.

(Continued from page 44.)

With regard to the localisation of separate functions in the different parts of the hemispheres very little is certainly known. The attempt to map out their surface by Gall and Spurzheim was psychologically crude, and anatomically absurd: in the few points in which the "phrenological" charts can be reasonably criticised they are wrong, and even if they had been right it would have been by chance, for the phrenologists had no facts to guide them.

Careful clinical study has shown that in a large proportion of cases of right hemiplegia, with loss of speech, but with no loss of power over the tongue, some lesion is situated in

the third frontal convolution, in the Insula, or the front part of the corpus striatum, on the left side. The full history of this interesting inquiry by Bouillaud and Broca in France, by Mr. Dunn, Dr. Jackson, Dr. Wm. Ogle, Dr. Moxon, and many other observers in our own country would be far too long to enter on here. Nor must I detain you with an account of the results of applying a local stimulus with electricity to the several convolutions which were obtained in the first instance by Fritsch and Hitzig in Germany, and lately with still more striking success by Dr. Ferrier. Enough has been ascertained to show that the movements produced by irritating the same part may be different in two different animals, and the whole subject is only beginning to be worked out.

I will rather occupy the remainder of the hour by pointing out on these diagrams the principal landmarks which you must learn if you would understand these experiments, or or contribute to our knowledge of this interesting branch of physiology by accurate observation in your future practice.

First, there is the *fissure of Sylvius*. You see it in this fœtal brain preceding every other, and it remains the largest. It separates the frontal from the sphenoidal (or tempero-sphenoidal) lobe. Next, running outwards from the longitudinal cleft between the two hemispheres you see this *fissure of Rolando* (or central fissure) dividing the frontal from the parietal lobe. Thirdly, there is the short, but deep and constant *parieto-occipital fissure*, between these two lobes.

The frontal lobe, which is much the largest, shows an *ascending frontal* (or præcentral) gyrus, running up along the fissure of Rolando. From this more or less distinct convolutions run forwards, which are called the *first*, *second*, and *third frontal*. The first answers to the "marginal" convolution of older writers, and runs on the inner side of the fissure on the orbital surface of the lobe which lodges the olfactory peduncle. The second lies next to it; and the third, also running parallel, ends by passing into the Sylvian fissure. The only subdivisions of the other lobes I will trouble you with are this well-marked *ascending parietal* (or post-central) gyrus running up behind the fissure of Rolando; and this constant and (as you see in the fœtus) early-formed sulcus in the sphenoidal lobe, which is named from running *parallel* to the great Sylvian fissure. On the inner surface of the hemisphere notice this well-marked *gyrus fornicatus* close to the corpus callosum, and the triangular wedge (*cuneus*) which is the inner aspect of part of the occipital lobe. Lastly, if we look on the under surface of a brain, and lift up the sphenoidal lobe, so as to expose the beginning of the fissure of Sylvius, we see a triangular mass between the frontal and sphenoidal lobes, known as the island of Reil (*insula*) and sometimes counted as a fifth lobe. Notice that it is close to the end of the third frontal gyrus, and that immediately above it is the butt-end of the c. striatum, so that a tumour as big as a marble might touch all three.

I need not tell you that the prominent orbital processes are due to large frontal sinuses, and that a large projecting occiput means a thickening of the protruberance for muscular attachment. Notice, however, that the frontal lobe goes further back than the coronal suture, which nearly corresponds to the præcentral sulcus; while the parieto-occipital fissure is anterior to the lambdoidal suture; so that the parietal bone is much larger than the lobe of that name, and covers part of the frontal and occipital lobes. (See a paper by Prof. Turner in the last number of the *Journal of Anatomy and Physiology*; and on the whole subject of the topography of the cerebrum, read a pamphlet by the same author, and Mr. Galton's translation of "Ecker on the Convolutions of the Human Brain.")

We have now gone through the central organs of the Nervous System. I have here represented their natural relations in a diagram with the commissures connecting them. Remember that each collection of ganglion-cells is a centre, but you may have grey matter consisting only of non-medullated fibres, and therefore only commissural, like the more common tracts of white fibres.

The list will read somewhat as follows:—

Cerebrum.....	C. Callosum (transverse)
	Fornix (longitudinal)
	Radiating fibres (from c. striatum)
Olfactory bulb...	Olfactory peduncle (to cerebrum)
C. Striatum	Anterior (transverse)
Thalamus.	Middle or grey (ditto)
	Posterior (ditto)
C. Quadrigemina	Pr. e. Cerebello ad Testes (to cerebellum)
Cerebellum	Superior (pr. e. cerebello ad testes)
	Transverse (pons)
	Inferior (pr c. cerebello ad medullam)
Bulb	Crura cerebri (to thalamus & c. striatum)
	Pr. e cerebello ad medullam (to cerebellum
Cord.....	Grey (transverse)
	White fibres (transverse and to brain)

CREMATION.

One hears so much about Cremation that a few remarks on the subject can scarcely prove uninteresting to our readers.

The *pros* are so strong, and the *cons.* so weak, that Cremation would doubtless be practised were not custom and prejudice so much opposed to its introduction amongst refined nations.

It has suffered considerably in popular estimation from the atrocious excesses of uncivilised tribes—as at the tragical "Suttees" of India, which have occured as late as June, 864; and as in vogue amongst certain aborigines of New South Wales, who burn the unweaned child with its dead mother.

At Siam, where Cremation is customary, such barbarous *denouements* are not countenanced.

The custom is of very early date. The first case we remember is narrated of Hercules, who built and set fire to his own pyre on Mount Œta; that his Cremation was of the most perfect kind may readily be imagined, when his ashes even could not be found!

Though, of course, we do not imagine that there is a particle of truth in the last paragraph, yet it serves to show it was no novelty in the earliest stages of Pagan history.

Homer says, Odessey b. xxiv.—

> "Oft have I seen with solemn funeral games,
> Heroes and kings committed to the flames,"

presumably not alive.

The Greeks seem to have preferred a well "storied urn," with more than one compartment. There must also have

been a peculiar satisfaction in having one's ashes mingled with one's friends, for in the same book we find—

> "There, we thy relics, great Achilles blend,
> With dear Patroclus thy departed friend,
> In the same urn a separate space contains
> Thy next belov'd, Antiochus', remains."

The Campus Martius afforded a convenient crematory for the populous city of Rome. Cremation was very general about B.C. 1225, and again revived by Sylla B.C. 78.

The Carthaginians employed this means of disposing of their dead, and we learn from "Virgil," their Queen Dido lit her own funeral pile with the assistance of Venus' torch.

We observed in a daily contemporary some short time since a statement to the effect that the Jews practised Cremation, and knowing them to be, we may say, blindly attached to their ancient ceremonies, we hunted through Josephus, but failed to find any evidence in support of such statement, but plenty the other way; perhaps some such thought suggested those exquisite lines of Byron's—

> "But we must wander witheringly,
> In other lands to die;
> And where our fathers' *ashes* be
> Our own may never lie."

Tacitus whose bitterness towards the Jews is well known condemns them for burying their dead. He says, "They derive their custom of burying instead of burning their dead from the Egyptians," &c. This assertion, it is somewhat needless to say, is a mis-statement, as Abraham was buried in the cave of Machpelah long before Israel went into Egypt.

It nevertheless appears that the Jews were not in the habit of using incineration, whatever they may have done in more modern times, neither were the Egyptians.

It was common in India when Alexander the Great extended his conquests in that direction, and practised by sects of philosophers called Gymnosophists and Brachmans, from the latter the modern Brahmins are descended who established the diabolical "Suttees" mentioned above.

We cannot enter into details so fully as we could wish within the limits of a short "article," but would recommend Cremation to the most serious attention of our readers.

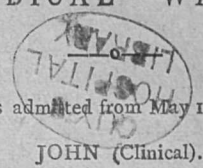
After perusing the incontrovertible arguments of Sir H. Thompson in its favour, we venture to say their effect will produce many converts to belief in Cremation, and go far towards combatting those national prejudices which are sure at first to bar its progress.

We notice with considerable satisfaction that the Cambridge Union supported a motion for introducing Cremation into the country by 101 to 42 against it.

We sincerely hope this important topic will claim the attention and support it merits from our sanitory reformers and legislators.

HINTS ON OPHTHALMIC OUT-PATIENT PRACTICE.—This invaluable little work has been reprinted, with corrections by Mr Higgens. We would recommend our readers to possess a copy, which can be obtained at our publishing office, price 1/6.

MEDICAL WARDS



New cases admitted from May 14 to May 19.

JOHN (Clinical).

2—Pleuritic Effusion
7—Tumour of Brain ?—Syphilitic

MIRIAM (Clinical).

8—Syphilitic Tumour of Brain
Cot-Diptheritic Inflammation of Fauces—Tracheotomy—Death
Cot-Albuminuria—Nephritis—Cellular Cutaneous Swelltng of Face

MARY

1—Hysteria
3—Phthisis, Acute
4—Ague ?
5—Cerebral
12—Morbns Brightii
17—Ascites—Morbus Brightii
22—Phthisis

ADDISON

23—Phthisis

STEPHEN.

4—Bronchitis—Phthisis
13—Subacute Rheumatism
14—Subacute Rheumntism
28—Morbus Cordis
29—Morbus Brightii
39—Malignant Disease of Abdomen
42—Pleuritic Effusion, left
46—Tuberculosis ?
47—Pleuritic Effusion
48—Phthisis
49—Rheumatoid Gout

SURGICAL WARDS.

New cases admitted from May 14 to May 19.

ACCIDENT

4—Cut Throat
8—Run over Abdomen
12—Concussion—Fractured Base (?)
16—Fractured Tibia and Fibula
18—Slight Concussion
23—Fractured Fibula
25—Fractured Tibia and Fibula
29—Fractured Femur
31—Fractured Tibia

LAZARUS

7—Old Injury to Ankle
8—Stricture
11—Knee-joint Disease
14—Extravasation
15—Malignant Disease of Cervical Glands
16—Caries of Metatarsal and Metacarpal Bones

CORNELIUS

No Admission.

LYDIA

26—Large Abscess of Neck

MARTHA

3—Bronchocele
5—Hare Lip
8—Fracture of Femur
9—Fractured Tibia and Fibula
13—Contracted Ankle
14—Abscess on Neck
15—Femoral Hernia—Reduced
18—Femoral Hernia—Operation
21—Cancer of Breast

CHARITY.

19—Suppurating Bursa Patella

DORCAS.

No admissions

JOB.

5--Abscess of Thigh

NAAMAN

12—Necrosis of Tibia
17—Deformed Foot

LUKE

No Admission

CORRESPONDENCE.

—o—

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—I hardly know whether you will do me the favour to publish this letter, as your columns seem so full of more interesting and professional matter. Your circulation is so large, and the demands upon your space so various and so lengthy that a *Student* may well despair of having his communication endorsed with the Editor's fiat—"To be printed."

The hope of appearing in print is much lessened by the fact that I am about to ask you for space to insert two or three letters on matters connected with our hospital and its administration. We are all justly proud of our *Alma Mater*, of the work she has done, and is doing in the world. We can look back to a long roll of glorious names which have owed their fame to her teaching, and perhaps in spite of it but we cannot remain blind to her faults—both of administration and teaching.

If, then, Mr. Editor, you will permit me, I shall have great pleasure in pointing out to the Olympian Deities who nod in inaccessible heights and preside over the destinies of our hospital what I humbly conceive some of her faults are. I propose to treat fully of the work a newly-entered student is expected to perform, and of the facilities afforded him for following up his curriculum of study.

Also I would beg space in common fairness to expatiate on the *Temptations* that lie in wait for the medical freshman, and which really turn the balance of his future career, making him, if he resist them, the pride of his profession, but if he succumb to their powerful influence, the listless, lazy dog, who is content to waste his own time and the money of his friends, while he successively fails at the appointed examinations.

I have but to ask a "fair stage and no favour," if you accede to my request. My intentions are "strictly honourable," as the world says, and if I should touch on a sore spot, or offend some long-established custom, I trust the defenders of such spots or customs will remember that if I nothing *extenuate;* I at the same time set down "*nought in malice.*"

My next letter will be on the "Difficulties of Examinations," if you can find room for it.

Your obedient servant,

AGATHOS.

[We are always happy to give a "fair stage and no favour" to those contributors whose writings spring from pure motives and earnest desires to advocate such principles as may be conducive to any improvement in the system of study and qualification existing. We accede to your request:—ED. *G. H. G.*]

CRICKET CLUB.

On Monday Guy's I. Eleven played Surrey Club and Ground, at the Oval, and won on first innings by 64 runs. At first affairs looked anything but going on well for Guy's—three wickets down for 20 runs. Power and Boughton made a good stand, and brought the score up to 135 before the fall of the next wicket. Power played a slashing innings of 120, and Boughton's 42 were well put together. On the part of Guy's the fielding was very loose, with the exception of Power, Boughton, Williams and Hetley.

Guy's

W. Gray, b Bush	4		
H. Williams, s Velvicks, b Goden	10		
J. McKern, b Bush	0		
J. Boughton, b Velvicks	42		
J. Power, b Velvicks	120		
G. E. Wallis, b Velvicks	0		
J. H. Earle, c Allcock, b Bush	2		
C. J. Mitchell, c Avory, b Velvicks	17		
O. Edwards, b Velvicks	0		
H. Hetley, c Godin, b Goden	12		
J. Reader, not out	1		
Byes 2, leg byes 4, wides 4	10		
	218		

Surrey Club and Ground.

H. K. Avory, run out	19		
T. W. Weeding, b McKern	6	not out	0
C. F. Cumberlege, b McKern	1		
F. B. Goden, c Edwards, b Mitchell	19	b Gray	7
J. Wood, c Gray, b Power	54		
A. Chandler, c Wallis, b Power	15		
A. A. J. Velvicks, c and b Reader	9	b Edwards	27
J. S. Pawle, c Earle, c Mitchell	6	o Power, b Gray	1
T. W. Bush, b Reader	0		
R. W. Ker, not out	21	c Boughton, b Gray	0
E. W. Burls, c Hetley, b Mitchell	0		
Byes 2, leg byes 2	4		1
	154		34

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Guy's Hospital Gazette.

VOL. IV.—NO. 8. SATURDAY, MAY 30, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

LAST week we made a few observations on the importance of practical surgery, prefatory to the consideration of the facilities enjoyed by students for taking part in operations.

We must carefully weigh the value of the various appointments open to students, especially with reference to those which are compulsory (beyond which many never go), and having thus considered the merit and worth of these appointments, we would discuss the subject as to how far they are calculated to afford men opportunities of becoming qualified for practice; we say qualified for practice, meaning thereby something beyond being qualified for examination.

That there is nothing synonymous in the two we think all must agree—although the former condition of things cannot exist without the latter, it is very certain that the latter can exist without the former.

Assistant Surgeons' Dressers and Dressers in the Surgery—"In order to meet the requirement of the College of Surgeons," we are informed in our prospectus, these appointments are made, and they are sufficient to render a man eligible for his examination.

The facilities afforded by holding the appointment of dresser in the Surgery, for seeing practice, are certainly very great and very numerous, and it is no mis-statement to say "seeing" practice, for here the matter stops; beyond *seeing* anything serious, the dresser in the Surgery has nothing to do with it, as if the case be of any interest whatever, the Dresser for the week is called in, and it goes away and is never attended to or seen by the dresser in the Surgery again. There is ample opportunity of treating cases which require no skill and very little knowledge, beyond such as an ordinary nurse possesses of dressing slight wounds, or applying bandages for sprains, or putting up a fractured clavicle or arm, &c., but there is really nothing beyond this, there is nothing that we can find at all in the appointment which is calculated to make a man fit for practice; it certainly does render him fit for a certain kind of practice, and that is to practice as an assistant to some great principal, to whom cases requiring any surgical skill and knowledge might be referred as they came under his hands. But this is not what is wanted. A man may be at such a distance from any superior aid, that lack of knowledge on his own part might cost his patient's life. We cannot always be dressers in the Surgery where we have a charitable house surgeon and a still more charitable Dresser for the week, ready and always anxious to do their best for relieving you from arduous tasks, by taking all cases of interest off your hands and out of your sight. However, be it understood distinctly that in thus writing of this appointment, we in no way disagree with its arrangement and the way in which it is carried out, we only question whether there is sufficient importance in it or rather sufficient knowledge to be gained by holding it to afford much material aid in qualifying a man for practice. The work must be done, and no one could do it with more benefit to themselves than the students, but we hold that it is of very little value to him beyond teaching him that which an ordinary nurse ought to know. The dresser in the Surgery finds his appointment only bringing him in contact with tooth forceps, ointment, lint, and bandages, and a few instruments of great intricacy, such as scissors, dressing forceps, &c., a few arm splints, and there the matter ends. If that appointment goes anything like half-way towards meeting the requirments of the Examining Board of the College of Surgeons, all we can say is, that it goes a very short distance on the road to qualification for practice.

We believe that in some cases six months of this appointment has been accounted sufficient, without holding any other to render a man eligible for examination. With such an amount of practical acquaintance with surgical operations, we should think in such a case the happy man, if fortunate enough to pass, must be bound to become a shining star, an ornament in his profession, and above all, a credit to his School and a monument *in memoriam* of the present regulations.

To be resumed in our next.

LECTURES ON MEDICINE.

—o—

By DR WILKS.

(Continued from page 51.)

DISEASES OF THE HEART.

Before you you can understand the method of diagnosing the morbid sounds of the heart, you must recall the physiology and action of the organ. It is necessary that you should carry this knowledge with you into the wards, and therefore I will first refresh your memories on this subject. To understand the action of the heart, we may first make the matter more simple by considering that the organ is double, and therefore we may take each half, the right or left side, as a perfect heart in itself. We thus have an auricle, ventricle, and large vessel of exit to deal with. The simplest idea of a circulating fluid is to be gained from the old experimental instrument, where an endless tube, with an elastic bag in one portion of it, is constantly sending the fluid round and round as the bag is compressed, and then if a porous substance be placed within it on the opposite side to this bag, the fluid will pass onwards to it in jerks and return through the porous substance in a continuous flow. If, instead of the porous material we suppose a system of capillaries, we gain some idea of the circulating process, and if further we make a dilatation of the end of the tube before it enters the bag (which corresponds to the ventricle), in order to collect a sufficient amount of fluid to send onward again at a fresh stroke, we have produced an auricle. In an apparatus of this kind, you see the fluid pouring into this dilatation or auricle, and at the same time into the elastic bag or ventricle and so on to the vessel or aorta. The auricle is nothing more than the dilatation of the vessel which carries the blood to the ventricle so as to completely fill the latter before it contracts; it is surrounded by muscular fibre, and it has a separate rhythmical movement of its own.

The action is this: the blood is pouring into the auricle and through its opening below into the ventricle until both these cavities are nearly full of blood; then the auricle quickly and momentarily contracts, so as to drive more blood into the ventricle, which then takes on the action and propels it into the aorta, which again reacting on the blood, drives it still further onward. The order of succession of the movements appears to be self-evident, and can scarcely be otherwise than I have described. Difficulties had been made by looking at the heart as a complex organ, but regarding it in this simpler light there can be but one order of motion. If a contractile tube is propelling its contents, the movement must be regular and onward. In the intestine the peristaltic action is of this kind, and in the case of the stomach we believe contraction takes place regularly from end to end, in repeated circles; so also in the uterus the contractions begin above and pass down in zones. In a simple blood vessel the blood would be propelled onwards in this rhythmical way and it would in nowise be altered because a part of the vessel was occupied by a large muscular contractile bag called the ventricle of the heart; nor would its action be altered by the tube being dilated at its end into a sac called the auricle. The fluid would first enter the auricle, then the ventricle, and then the aorta in regular succession. The blood is, in fact, pouring down into the auricle and through the aurioulo-ventricular orifice into the ventricle, the mitral valve floating up in the fluid, when the auricle suddenly contracts, driving more blood onwards into the ventricle, which then itself contracts more slowly, propelling the blood into the aorta, which again contracting on its contents sends it still further onward into the system.

That this is the action of the heart, is proved by the cardiograph, an instrument which may be placed over different parts of the heart, and the tracing of their movements indicated. The index over the auricle makes a sudden rise and as quick a fall, the index over the ventricle does not move until that of the auricle has nearly fallen and after this comes the index of the aorta; the series then again begins, but remember that the auricle does not move until the aorta has ceased to contract; therefore, the contractions of the auricle and aorta are not synchronous. If an index be placed over the ventricle alone, the order of movements can also be seen, for although it is only moved violently during the contraction of the ventricle, it is slightly jerked upwards previously by the contraction of the auricle and it receives also a slight jar afterwards by the contraction of the aorta. The rhythm of the heart's action can thus be easily demonstrated. If the action of the heart be represented by a circle divided into fifths, we should find that nearly two-fifths are occupied by the contraction of the ventricle, nearly one-fifth by the contraction of the auricle, and nearly the remaining two-fifths by the refilling of the auricle and and ventricle. The short time which is left, deducted from the periods of fifths, is occupied by the momentary contractions of the auricle. If you watch the movements of the heart in a living animal, you will observe a deliberate movement of the ventricle, followed by that of the aorta, but the auricle so momentarily contracts before the ventricle that it looks as if the movement of the one passed into that of the other in a kind of screw-like motion. The whole action of the indeed is screw-like; the ventricle is spiral, and as it contracts, the blood is sent spirally into the aorta which then takes on the same action, and the sigmoid valves close down, not simultaneously, but one after the other, fitting together with a screw-like motion. The four large valves or orifices of the heart are arranged one around the other, in a similar spiral manner. This spiral movement of the ventricle is due to the arrangement of six or seven distinct layers of muscular fibres, crossing one another. The use of the papillary muscles is clearly for keeping the valves tight during the contraction of the ventricle.

The contraction of a cavity of the heart is called its systole, and its opening or expansion the diastole. Now, if you place your ear over the heart you will hear two sounds, one dull and prolonged and the other short and sharp; the first corresponds to the contraction of the aorta, which happening during the opening of the ventricle is called diastolic. For you will observe that we cannot unfortunately call the sounds after the conditions which cause them, for such has not been the practice, but we call them after the state of the ventricle at the time of their occurrence; thus this second sound is not named after the condition of the aorta by whose contraction it is caused, but diastolic, after the ventricle, and in the same way the sound produced by the contraction of the auricle, in some forms of disease is not called auricular, but presystolic, because happening before the systole of the ventricle. This nomenclature is unfortunate, for it not only prevents us from naming a sound after its true cause, but is wrong in leading us to think even that names accurately correspond to the state of the ventricle, which they do not. I told you that after the ventricle con-

tracts, it again opens, and remains open while it is being fillled with blood, and during this period the aorta is contracting and the auricle is contracting; therefore, whatever occurs in the heart's rhythm, which is not systolic, is diastolic, and yet we have limited the term diastolic to that first portion only of the heart's dilatation, which corresponds to the aortic contraction or second sound of the heart. At the present time the term diastolic is used by most writers to indicate only that period of the heart's action which corresponds to the second sound, although there are others who use it in a larger sense to denote the whole period of the heart's dilatation. The first sound of the heart occurs during the contraction of the ventricle, its blow against the chest-walls, the flow of blood into the aorta, and the closure of the mitral valves. Most physiologists believe the stretching of the mitral valves is mainly instrumental in its production, influenced of course by the condition of the muscular walls of the ventricle to which the valve is attached. The sound, therefore, although mainly produced here, is heard best at the apex, because the base of the ventricle lies deep in the chest, whilst the apex is tilted forwards to the chest-wall to which point the sound is caused. The second sound is heard best at the base over the region where it is produced; it has been demonstratively shown to be due to the closure of the sigmoid valves.

You will observe, then, that you have a means of knowing the causes producing abnormal sounds by the time of the heart's rhythm in which they occur; and also from the position of the sound in relation to the heart, all mumurs, for example, produced at the mitral orifice being heard best at the apex. These facts would be true in whatever part of the body the heart might be placed; but if it is always accurtely situated at one spot, we have a further mode of ascertaining the origin of particular morbid sounds, or at least by the direction in which the sounds are conducted. Now, if we place the heart in position, we shall find that if a line be let fall along the left side of the sternum two-thirds of the heart are to the right of this line and one third to the left. The base of the heart is at the third rib, and still higher if we reckon the appendages. The apex is at the upper edge of the sixth rib, and is formed by the left ventricle, it is found about two inches below the nipple and a little to the inside; the nipple being placed very uniformly on the junction of the fourth rib, with its cartilage. The area of dulness is about two-and-a-half inches in each direction over the lower part of heart, the lung covering the upper part. Now, as regards the position of the valves, you must remember that they lie one over the other, which you seem sometimes to forget when you say in your reports that you place your stethoscope over this or that valve, which is impossible, for the stethoscope cannot cover one without partially overlapping another; therefore, the origin of the sounds is not known by the position of the valves, but by another method, it is by the conduction of the sound in any given direction by the current of the blood. The valves are situated about the third costal cartilage, a little above and a little below. The *pulmonary* valves are at its upper edge; the *aorta* behind them as well as a little below and inwards towards the median line. The *mitral* is at the third intercostal space, and a little to the outside of the aortic. The *tricuspid* is in front of the mitral, and is nearer the median line behind the sternum. The aorta passes to the right, the pulmonary to the left side of the chest. The sounds, therefore, produced at these valves are best heard at the second right costal cartilage; the second left costal cartilage, the fifth right costal cartilage and the apex of the heart respectively. Now, remember the rhythm of the heart before we pass to the morbid sounds.

Filling of heart and contraction of auricle—Period of silence
Contraction of ventricle—First or systolic sound
Contraction of aorta—Second or diastolic sound
Filling of heart and contraction of auricle—Period of silence

PHYSIOLOGY OF MOTION AND SENSATION.

By Dr. PYE-SMITH.

Lecture X.

Before passing from the central organs of the Nervous System, let me call your attention to these sketches, showing the mutual relations of the principal ganglia and their commissures.

First come the olfactory lobes, receiving the nerves of smell, and connected with the cerebrum proper by the olfactory peduncles.

Next, the corpora striata, united by the "anterior commissure" to each other, and continuous, behind with the thalami, laterally with the cortical grey matter of the hemispheres by their radiating white fibres.

The two hemispheres, beside these roots of connection with the c. striata from which they grew, have two great intrinsic commissures. One, the fornix, is, as the name implies, an arch of white fibres, forming a longitudinal commissure for each hemisphere. Beginning as the c. albicans of its own side, it bends upwards till it meets its fellow, from which it again separates to form the posterior crus of the arch as the tæmia hippocampi. The front spandril of the bridge is occupied by the septum lucidum. The second commissure of the hemispheres is transverse, the c. callosum, which receiving converging fibres from the surface of one passes over to unite in the same way with the other. It is laid across the fornix, just as boards are laid over the arch of a bridge.

The next pair of ganglia, the thalami, beside being continuous with the c. striata in front and the c. quadrigemina behind, are connected with the bulb and cord by the crura cerebri, and have two transverse commissures, the grey and posterior, uniting each thalamus to its fellow.

The optic lobes (c. quadrigemina with the c. geniculata) receive the optic nerves; and, beside their continuous connection with each other and with the thalamus, have each a commissure running backward to the cerebellum (pr. c. cer. ad testes).

The bulb (medulla oblongata) beside receiving the auditory and other cranial nerves is continuous with the cord below; and connected with the cerebellum above by the pr. c. cerebello ad medullam, and with the thalami, c. striata and hemispheres in front by the crura cerebri.

The cerebellum has its superior peduncles connecting it with the optic lobes, its inferior passing down to the bulb, and its great transverse commissure or pons.

Lastly, the several ganglia of the cord form a continuous series, receiving the spinal nerves, united intrinsically by the transverse grey and white fibres, connected above with the cerebellum and cerebrum by the commissures above described, and in the cervical region with the sympathetic ganglia.

Let us now go back once more to the sensori-motor apparatus with which we started. We began with the muscular contraction, the most obvious work done by the machine. We then considered the nerve-impulse which conveys the stimulus to the muscle, and we have now completed our rapid survey of the third element of the apparatus, the central organs which directly or indirectly receive afferent and give out efferent stimuli. But the nervous system consists, beside central ganglia and conducting nerves, of certain "end-organs," structures placed at the extremities of the nerves, for the purpose of transmuting a physical impression into an afferent nerve-current, or translating an efferent nerve-current into a muscular stimulus.

Thus, there are two sets of end-organs, those belonging to the efferent and those belonging to the afferent nerves. We may compare the former to the machine which translates the electric current of a telegraph-wire into the mechanical force which pricks out the message in letters, and the latter to the machine at the receiving-office which turns the pressure of the clerk's fingers as he works it into the current that passes through the wires.

We will first deal with the *efferent end-organs*. The motor nerve to a muscle gradually breaks up in the perimysium into its component fibres. Each of them (in most cases at least) supplies a single muscular fibre, and loses its medullary sheath, while its axis-cylinder splits into numerous fibrillæ.

It was formerly supposed that these fibrils either "lost themselves" (or were lost) between the muscular fibres, or else formed loops. It is possible that the latter mode of termination really exists, but in most, and perhaps in all, cases each axis-cylinder of the nerve is directly connected with each fibre of the muscle by a structure called an "end-plate" or motor disc. This structure was discovered by Doyère in one of the Lemurs (*Milnesium tardi-gradum*) five and thirty years ago, and various forms of it have since been recognised in beetles and other invertebrata, in reptiles, mammals, and in man himself. I have copied these figures from those of Kühne representing it in the green lizard. You see that the nerve fibre loses its double contour just before piercing the sarcolemma and then expands into a series of branches (the end-plate proper) spread out upon a granular nucleated disc which lies immediately beneath the sarcolemma. The whole structure, which may be called a nerve-hillock or cone, is oval, nearly as long as the diameter of the muscle-fibre and thicker in the middle than at the edge. You may compare it with its nerve-fibre to the placenta with the umbilical cord. Or let this folded cloth represent the granular disc, then laying my out-spread hand upon it, the arm represents the axis-cylinder of the nerve, the sleeve the medullary sheath, and the hand and fingers the end-plate proper with its branches. The primitive sheath of Schwann becomes continuous with the sarcolemma.

Are we to look for other efferent end-organs than motor-plates? Are other than motor-impulses sent out from the central organs? It has often been maintained that there are nutritive nerves which check or stimulate or modify the vegetative processes of growth and nutrition. Their supposed function has been connected with the doctrines of a nervous pathology, which like all other "systems of medicine" has been deservedly discarded, The ulceration of the cornea which follows injury to the nerves of the orbit, the bed-sores which are one of the gravest complications of fever and paralysis, the deficient development of the bones of a palsied limb in a child, have all been adduced as examples of disturbed nervous influence on nutrition, and have all been explained as the result of loss of sensation or disturbance of the supply of blood from lesion of the vaso-motor nerves. The question whether efferent nerves regulate the secretion of glands forms another chapter of the same controversy, for secretion, as you know, is only a variety of cell growth. It has long been proved that they do so by the vaso-motor filaments distributed to the muscular coat of the arteries of the gland, but some experiments appear to show that there is also an effect independent of this, and it has been stated (Pfluger) that nerve filaments may be seen to become actually continuous with the epithelial cells lining the acini of the sub-maxillary glands or to form end-organs like ganglion-cells. (After describing some of the experiments made to decide the question of the existence of efferent nerves directly influencing nutrition, it was left as a point not yet conclusively decided).

We must now pass to the *afferent end-organs* of the nervous system, and with them we will consider the functions of the nerves with which they are connected. For, as I have before pointed out, the "specific energy" or peculiar conducting power of each nerve depends not on itself but on the structures at each end, and from the greater differentiation of the distal extremity it seems probable that it is the more important of the two in determining the function of the nerve. A nerve conducts a nervous impression as a wire conducts electricity, but what the message shall be depends on its origin and its destination. The olfactory nerve is the nerve of smell, because it comes from an olfactory surface and ends in an olfactory ganglion, but if you could connect it with a papilla of the finger and a sensitive ganglion-cell, it would become a nerve of touch, and if with a muscular fibre and a motor ganglion-cell, it would convey a stimulus which would cause the muscle to contract.

The olfactory end-organ, with which we will begin, is situated, as you know, in the upper part of the nasal forsœ. The epithelium here is rich in pigment, well supplied with muciparous glands and among the ordinary columnar cells (which are without cilia) are scattered others which are peculiarly modified to receive impressions of smell. Here are drawings of them in the frog, showing the long stiff hairs in which they end and the connection of their elongated bases with filaments of the olfactory nerve. Here is another diagram of the olfactory membrane of a fox (Frey) and these are drawings of separate cells in the newt and the dog by Dr. Martin (after describing these). This, then, is the apparatus for changing the physical condition we call an odour into the physiological condition which is transmitted to the brain as the sensation we call smell. Of the physical object of the sense we know that it must be volatile, and in most cases it is oxydizable (Graham). Thus sulphuretted hydrogen has a strong smell, and carburetted hydrogen none, and a stream of carbonic acid will prevent an odour being perceived. The loss of smell we experience from a cold is probably due to the swollen mucous membrane preventing access of air to the olfactory region, in the same way as we attempt to shut it off when it carries a foul smell by contracting the *compressor narium*. Beside the odorous particles

which enter in ordinary breathing we can direct a stronger current of air by forcible inspiration with closed mouth (sniffing), and we also smell food through the posterior nares. The sense of smell is little cultivated by civilised man, but we see how it can be educated by artificial selection in the case of a pointer, and it is possible that we might with adequate pains construct a notation and scale of odours like those of colours and of sounds.

APPOINTMENTS.

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Mr. F. C. Turner, M.D. Cantab, M.R.C.S., has been appointed Resident Assistant-Physician to St. Thomas' Hospital.

Mr. A. K. Newman, M.B., L.R.C.P. Lond., has been appointed Medical Registrar to the National Hospital for the Paralysed and Epileptic.

Mr. Charles B. Dalton, M.R.C.S., L.S.A., has been appointed by the [Government Assistant-Colonial Surgeon at San Lucia.

ROYAL COLLEGE OF SURGEONS.

The following are the questions given at the Primary Examination for the Fellowship of the College of Surgeons, on May 22 :—

1. Describe, in their relation to each other and to the several parts in contact with them, the muscles which form the floor of the Posterior Triangle of the neck.

2. Name the structures, in their relative order, which would be necessarily divided in cutting out the last rib through an incision made in the skin over it.

3. At what period of embryonic life does the formation of the Liver commence ? Describe the process of its development up to the period of birth, and the changes it undergoes during the first year after birth. State what functions it performs during intra-uterine life.

4. What arrangements exist for neutralising the effects on the Brain of shock in jumping from an elevation on to the feet ? Describe the mechanism of these arrangements, and how they act.

The following gentlemen passed :—

Mr. C. H. Golding Bird.
Mr. Chicken
Mr. W. Cock
Mr. Symonds.

APOTHECARIES' HALL.

The following gentlemen passed the Second Examination on the 28th May :—

Mr. R. Brummitt
Mr. D. T. Evans
Mr. J. H. Paley.

CORRESPONDENCE.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—I noticed in your impression of May 9th a letter signed by "Amicus," calling attention to the want of a room where students could place their hats, coats, and umbrellas.

Surely your corrrspondent "Amicus" cannot be ignorant of the fact that the hospital authorities have most generously placed at the disposal of every student a locker or box in which he may keep his belongings. What, then, is the necessity for a cloak-room ? Why cannot students be content with the very ample provision already made for their comfort ?

I also noticed a reference in the same letter to the disappearance of umbrellas from the Porter's Lodge, and the occasional unaccountable borrowing of other articles from the same place. I sincerely hope for the credit of the hospital that "Amicus" has been entirely misled by his informant in making this statement, and that your correspondent will at once withdraw his assertions. But if, unhappily, there be truth in his statement, it is undoubtedly the duty of the members of the governing body of the hospital to investigate the matter and if they discover the perpetrators of such mean and dirty actions, to eliminate them at once from Guy's, and remove them to some sphere where their peculiar talents will not annoy those with whom they are brought in contact. It will indeed be a bad day for Guy's if it be understood that thieves and liars are admitted to her classes for the sake of L. S. D.

Your obedient Servant,
INIMICUS.

MEDICAL WARDS

—o—

New cases admitted from May 21 to May 27.

ADDISON

21—Diabetes
23—Phthisis
26—Phthisis
27—Phthisis

JOHN (Clinical).

5—Malignant Disease of Abdomen
6—Aortic Disease
9—Pleuro-Pneumonia

MIRIAM (Clinical)

31—Carbolic Acid Poisoning—Recovery
34—Peritorsitis—Ascites

STEPHEN.

28—Aortic Disease
30—Aortic Disease
32—Morbus Brightii
34—Tubercular Meningitis (?)
36—Broncho-Pleuro-Pneumonia
45—Syphilis
46—Neuralgia

MARY

3—Ague
18—Diabetes
20—Chorea Morbus—Cordis

SURGICAL WARDS.

—o—

New cases admitted from May 21 to May27.

LYDIA

10—Nævus

CORNELIUS

1—Concussion
1—Fractured Tibia and Fibula
2—Fractured Femur
13—Fractured Tibia and Fibula
15—Fractured Spine in Cervical Region—High Temperature, 108·5° and Death
17—Fractured Tibia and Fibula—Division of Tendo Achillis
19—Large Scalp Wound
20—Injury to Abdomen

LUKE

3—Diseased Knee
3—Genuvalgus
4—Necrosis of Tibia
4—Scrotal Hernia
4—Hernia with inflamed Scrotum
10—Strumous Ulceration of Scrotum
11—Stricture
12—Fistula in Ano
13—Injury to Perinæum
17—Abscess of Neck

NAAMAN

16—Prolapsus Ani

JOB.

7—Gluteal Abscess
20—Phimosis
22—Fistula on Ano

LAZARUS

4—Urinary Fistula
6—Ulcer of Rectum
15—Diseased Knee

ACCIDENT

No Admission

MARTHA

4—Scirrhus of Breast
5—Scirrhus of Breast
15—Cellulitis of Neck

DORCAS.

No Admissions

CHARITY.

2—Tumour of Superior Maxilla
3—Fractured Tibia and Fibula
7—Hysteria
7—Comminuted Fracture into Knee-joint
10—Fractured Tibia and Fibula
13—Fractured Tibia and Fibula
17—Fractured Femur
19—Housemaid's Knee
24—Fractured Femur

CRICKET CLUB.

GUY'S ELEVEN v. UNIVERSITY COLLEGE HOSPITAL.

This match was played at Blackheath on Thursday, May 21st, and resulted in a victory for Guy's by 75 runs on first innings. For Guy's, Gray and Williams batted well, and Earle bowled well.

Guy's

H. Williams, b Buckell	33
W. Browne, run out	0
W. Gray, c Moone, b Hill	68
J. B. Broughton, c Hill, b Buckell	10
G. Power, b Buckell	3
P. E. Wallis, c Hunter, b Hill	5
C. Collins, run out	3
J. H. Earle, c Nicholson, b Hill	11
O. Edwards, b Buckell	6
H. Liddle, b Buckell	3
J. Reader, not out	0
Byes 11, leg byes 1, wides 1	13
Total	155

University College Hospital.

Nicholson, c and b Gray	1	c Wallis, b Earle	0
C. B. Hunter, run out	0	not out	48
C. N. Kennedy, b Earle	11	b by Earle	2
C. B. Hill, c Liddell, b Earle	9	run out	0
T. Moone, s Broughton, b Gray	21	run out	1
E H. Buckell, b Power	17	b Earle	1
E. Hughes, b Power	10	s Boughton, b Gray	8
T. C. Mughiston, b Power	7	c Edwards b Earle	1
R. H. Foa, not out	1	b Power	0
W. T. Atkey, c Wallis, b Earle	0	not out	6
Byes	3	Byes 1, Leg Byes 2	3
Total	80		70

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COMMUNICATIONS RECEIVED.

Dr. C. Hall, Mr. A. Gillingham, Mr. W. H. Spurgin.

Mr. W. H. Spurgin—Next week.

J. MILLIKIN

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Guy's

Hospital Gazette.

VOL. IV.—NO. 9. SATURDAY, JUNE 6, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

IN continuation of our remarks upon the general practical education of students in surgery, and the provision made by the authorities for students to become practically acquainted and familiar with what might almost be termed cardinal operations, we pass on to discuss the appointment known as Assistant-Surgeons' Dresser. Last week we considered, as briefly as possible, the worth of holding the appointment of dresser in the Surgery, which is the companion appointment of assistant-surgeons' dresser, and therein failed to find sufficient to qualify a man for practice, although by holding that appointment for six months he may be qualified for examination.

By holding the appointment of dresser to an assistant-surgeon, a widely different style of surgical practice is brought before us compared to that of dresser in the Surgery. Seeing the out-patients, and prescribing for them, brings a man in contact with what is ordinarly seen in every-day general practice, and so far it is exceedingly valuable, but even this particularly beneficial part of the appointment is robbed to a certain degree of its usefulness by the careful restrictions put upon the drugs which the dresser is allowed to use, they are generally confined to those preparations which are harmless, and the list so carefully studied, appears some-what ludicrous, especially when the purport is taken into consideration; for what is the presumable purport of the restrictions? We should say that they exist for the purpose of prohibiting students from using drugs which might in certain ways and under certain circumstances prove dangerous to the welfare of the patient for whom they are prescribed. But for all this, the restrictions might certainly be abolished, for unless they exclude everything beyond simple purgatives and placebos, we cannot see their use, as any of the active drugs (some of which are permitted on the list), are, under certain conditions, likely to prove unfit for exhibition according to the condition of the patient. However, there is certainly a great necessity for care that potent and excessively active agents should not be placed at the disposal of those who are unacquainted with their use and effects. This will, we think, have a certain bearing on the main point that is claiming our attention, for it certainly is somewhat peculiar to contemplate, that holding an appointment for the the purpose of gaining experience with the drugs at your disposal limited to the simplest in Pharmacopœa, will qualify you for an examination which when once passed will place you in such a position as to enable you to use the whole Pharmacopœa at your own discretion, when we trust the experience you have had in prescribing may be beneficial to you and your patients. We may have somewhat digressed from our original intention in making these observations on the restrictions of drugs for use in the out-patient department, but the subject is one so frequently complained of that in passing it has not been deemed unworthy of notice. With regard to the facilities for practical surgery here existing, there is a slight advancement over the appointment previously considered. Here a man becomes acquainted with the method of antiseptic treatment, and learns to perfection (if practice makes perfect) the way in which the spray-producer is worked, which to a certain extent horrifies him with the idea that he will have to be attended by satellites when he gets into general practice to work his atomiser, but looking beyond trivial things, we find nothing of much value in this appointment to qualify a man for practice, he has four or five beds to dress for, and these are generally, unfortunately, half occupied by syphilis cases, which in country practice is not met with once a year

There are very seldom any operations in which he is called upon to play a greater part than pump the spray. There are no fractures to put up, and this deficiency is of itself sufficient to render the whole appointment, from a surgical point of view, nothing worth, for who would believe that men are ever admitted into the ranks of the profession and their names enrolled on the list of the members of the College of Surgeons when they have never reduced any dislocation of fracture of the lower extremity? Absurd!

To be resumed in our next.

LECTURES ON MEDICINE.

—o—

By DR WILKS.

(Continued from page 59.)

DISEASES OF THE HEART.

Now, we will pass on to the morbid sounds. These are mainly due to the changes in the valves, at the auriculo-ventricular orifices and mouths of the large vessels. You can easily understand how, if these valves were impaired, a leakage would occur, and also how they might as a result of inflammatory contraction cause an impediment in the channel of the blood. It would follow from this that at each orifice there might be a condition which should cause obstruction, and an imperfection of the valves which might cause regurgitation, and that there would be no reason why these two conditions should not occur together at the same orifice. Since, then, there are two hearts, we have eight possible morbid states, equal to the production of morbid sounds or bruits. Practically, however, these are almost entirely confined to the left side.

Now, let us suppose the auriculo-ventricular orifice contracted (and which would really be the mitral valve) the blood would meet with a difficulty in its passage through it, and a bruit would be produced; this would necessarily occur during the contraction of the auricle, and would be, therefore, an auricular systolic bruit. It would take place during the normal period of silence, and before the first sound of the heart. If the same orifice possessed by an imperfect valve, regurgitation would occur, and a bruit would be produced, necessarily occurring during the systole of the ventricle and first sound of the heart. If the larger vessels were obstructed, which would be practically the aorta, a bruit would be produced, which necessarily would also be produced during the ventricular systole. If regurgitation took place through the same orifice, a bruit would be produced during the time of the contraction of the aorta or second sound, and which happening at the period when the heart is dilating, is called diastolic. The morbid sounds are named after the the condition of the ventricle at the time they occur, and, therefore, two of them would be systolic, one presystolic, and one diastolic, although, as before said, the presystolic might with justice be called diastolic, and it is thus named by some authors.

Obstruction at auriculo-ventricular valve : auricular contraction : presystolic sound : natural period of silence.
Regurgitation ditto : ventricular contraction ; systolic sound ; natural first sound.
Obstruction at sigmoid valves : ditto : ditto : ditto
Regurgitation ditto : aortic contraction : diastolic sound : natural second sound.

Now, if we take each heart separately, these four sounds are distinguished, as here seen by the period of the rhythm in which they occur, and they may also be distinguished by the direction in which the sounds are conveyed. The direction is mainly due to the course of the current of the blood. Thus, if we take the left side of the heart, and consider the case of obstruction of the mitral orifice, the sound produced by the blood passing through the contracted orifice would be be carried downwards to the apex. In the case of regurgitation through the mitral orifice, I told you that as regards the front of the chest, all sounds having their origin at the mitral valve were heard better at the apex than over the valve itself, because the latter was deep-seated and the apex tilted the sound forward to the surface on which it struck, whilst at the same time this bruit produced by regurgitation, although heard better in front at the apex than over the valve itself, yet, is carried back towards the auricle with the

flow of blood, and is, therefore, heard loudly in the back. Any obstruction of the aorta which should produce a bruit would in like manner be carried from its point of production at the orifice of the vessel along the aorta, and a bruit produced by regurgitation would be carried downwards either towards the apex or down the sternum.

The same rule holds good if we take the right side of the heart, where disease is more rare. The only bruit which is not very uncommon is that produced by regurgitation, through the tricuspid valve, and this would be systolic in rhythm, and heard not over the apex, but at the lower part of the sternum and fifth right costal cartilage. If the tricuspid were narrowed, there would be, I suppose, a presystolic bruit heard towards the right side. If the pulmonary artery were contracted, which is sometimes congenitally the case, a systolic bruit would be heard at the base of the heart, conducted to the left side, under the clavicle or second left costal cartilage. If regurgitation through the pulmonary orifice, then a diastolic bruit would be heard conducted downwards towards the right heart.

As regards the left side, to which disease is almost exclusively confined, you may remember that a systolic bruit heard best at the apex and lost as the stethoscope passes upwards, but heard around the chest, beneath axilla, and heard louder again at the inferior angle of the scapula, between the space, corresponding to 9th vertebra, implies *mitral regurgitation.*

A systolic bruit heard at the base and carried along the course of the aorta, being very audible at second right costal cartilage ; seldom heard behind, or, if faintly, opposite third and fourth vertebræ, implies *aortic obstruction.*

A diastolic bruit replacing the second sound heard at the base and carried downwards either along the sternum or towards the apex, implies *aortic regurgitation.*

A presystolic bruit heard about the region of the apex and almost confined to this spot, implies *mitral obstruction.*

Other diagnostic features of these valvular defects I will speak of when I have described the changes which the cavities of the heart undergo in these respective diseases. Enlargement of the heart, as a rule, is due to some impediment in the course of the circulation. If a muscular organ have increased work to perform it becomes hypertrophied, a good example of which is seen in the bladder in the case of stricture of the urethra. If there be contraction of any of the cardiac orifices there results hypertrophy of the cavity behind it, as of the left auricle in narrowing or stenosis of the mitral valves, and of the left ventricle in narrowing or stenosis of the aortic orifice. If, again, the cavity behind is unable after a time to overcome the difficulty and the blood rests there,it becomes dilated also ;much more is this the case where a valve is inefficient, for then a part of the blood flows back into the cavity, which can never empty itself, and becomes necessarily much enlarged. In obstruction of an orifice the tendency is to hypertrophy of the cavity behind ; in regurgitation the tendency is towards dilatation. Other circumstances of course come into play to affect the relative proportion of these two conditions, as, for example, the state of nutrition necessary for the growth of muscle, and therefore in a case where the tissues are badly nourished, the heart would be specially inclined to yield when much pressure is put upon it.

Since the heart is a double organ we are obliged to regard the lungs in this question of enlargement, since they lie physiologically between the right and left hearts. Now, if we take a normal heart with its four cavities and beginning on the right side we can see how changes in its size will occur. Since disease rarely happens to the tricuspid or pulmonary valves we must first go to the lungs themselves ; now if any impediment occur in the circulation through these organs, as in bronchitis, we necessarily have hypertrophy of the right side of the heart, first of the ventricle and then of the auricle. Passing to the left side of the heatr, if any impediment occur at the mitral orifice, there is, of necessity, great enlargement and hypertrophy of the left auricle ; so marked is this that a safe conclusion may be drawn from it as to the existence of obstruction at the orifice below it, and it is an interesting fact to remember in connection with its slower contraction under these altered circumstances. In this case the blood is thrown back on the lungs, and here an obstruction being caused, the right side of the heart becomes hypertrophied as in the case of bronchitis. When there is simple regurgitation through the mitral orifice, the auricle enlarges, but it is not thickened as in the case of obstruction. In aortic obstruction the ventricle is simply hypertrophied,whilst if regurgitation go along with it there is dilatation added to hypertrophy, and the ventricle becomes very much enlarged ; this necessitates after a time an enlargement of all parts of the heart behind it in the course of the circulation, and the whole organ becomes proportionally much enlarged, and we have what is sometimes called the "bovine" heart. Several models in the museum were made to illustrate these changes in the different forms of valvular disease.

Now, all these conditions have to be taken into consideration when attempting a diagnosis of cardiac disease ; this being mainly obtained by considering at what time of the heart's rhythm a murmur occurs ; by the direction in which the murmur is transmitted, and by the position of the bruit as regards the walls of the chest. I should tell you that although for the sake of simplicity, I have described each of these murmurs as occurring separately, any two of them may take place together, for when we say a valve causes obstruction,we do not imply that its imperfection may not also cause regurgitation. Now this is very commonly the case as regards the aortic orifice, and therefore, whilst there is an obstruction or onward murmur, there is very frequently a backward or regurgitant murmur heard at the same time, and we have consequently a double aortic murmur, the systolic and diastolic being combined.

CORRESPONDENCE.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

THE TREATMENT OF ACUTE AND CHRONIC BRONCHITIS AND ASTHMA.

To the Editor.

Sir,—Perhaps the following few words upon the treatment of the above-mentioned distressing maladies, more especially of the two latter, may prove interesting to some of your readers.

I have tried iodide of potassium in over a hundred cases with almost invariable success, in fact with such success, that patients have declared it has "acted like a charm," others have stated that no medicine ever had any *real* effect upon their ailment before.

Iodide of potassium has a marked effect upon the breathing, reducing the frequency of the respirations. Almost after the first dose patients have stated they have felt the medicine "touch their complaint." I usually prescribe it with carbonate of ammonia, and when the cough is very troublesome add tr. belladonnæ and vini ipecac.

In the above complaints I rarely give anything else but the above.

In one case of broncho-pneumonia, I tried potassii iodi with tr. hyoscyami and ammoniæ carb., and the respirations were quickly and astonishingly reduced from forty per minute to less than half that number.

In conclusion I would add that I have purposely given a mixture containing ammonia, tr. belladonna, vini ipecac, spt. æth sulph., &c., *without* potassii iodi, without finding much relief, then have added the pot. iodi., and found the patient greatly relieved at once.

I have given this remedy about a year's trial, and can confidently recommend it as *the* remedy in these distressing complaints.

I am, Sir,
Your obedient servant,
WM. HY. SPURGIN,
Res. Med. Off. to York Dispensary.

May 25, 1874.

To the Editor.

Sir,—I am very glad you do not hold yourself responsible for the opinions expressed by your correspondents, for surely the responsibility of such letters as that of "Inimicus" in your last issue is attended with no credit to any person.

I am very happy to inform "Inimicus" that I am no stranger to the fact of the hospital authorities having provided for every student a "locker or box in which he may keep his belongings." What is the use of them? There is no locker or box in which a man could possibly keep his umbrella, unless he were to have a special stick to it, either on the telescope principle or a modification of a fishing rod, for an ordinary sized umbrella would require just upon two of the lockers to allow of its admmittance. Again, how delightfully comfortable it would be on a wet and dirty day to have to fold up tightly your overcoat and cram it into those small boxes or lockers, how deliciously comfortable it would be putting on your wet coat after such packing, and what a respectable member of society a man would look whose great coat had been subject to such conditions. Principally, however, I would point out and highly commend the refined taste of "Inimicus" when he advocates the appropriation of those beastly little boxes or lockers in the precincts of the dissecting-room to such use; what a morbidly high idea of cleanliness he must have when he recommends one to place his things in those small pigeon-holes with his dirty dissecting attire and instruments. No! Certainly the idea will not do; the lockers in the dissecting-room are in no way calculated to take the place of a cloak room, nor is it in any way possible for a man to make them anything like a substitute, no matter how much he may feel inclined to do so.

As for my assertion, in reference to the disappearance of articles about the hospital, I firmly adhere to it, and judging from the tone of "Inimicus'" letter, I should imagine he has only been at the hospital a few weeks, or if longer, has never had any *superfluous* articles either in clothing or otherwise to require the services of a cloak-room. I trust that his condition will, however, improve, and that in time he may recognise such things as may call for a contradiction of his name, which is, under the present circumstances, no misnomer, and that instead of deserving the title of "Inimicus," he may become to Guy's as

AMICUS.

To the Editor.

Sir,—You were kind enough to append to my letter, in one of your late impressions, an editorial note acceding to my request to be allowed to address a series of letters to you on the affairs of the hospital relating to students. I trust, therefore, you will find a place for this letter in your columns—the first of the series.

There is, I think, no part of a student's course at a hospital which so powerfully affects his mental peculiarities as that which is intended to test his progress during the course—I mean the examinational part.

Like myself, who now have the honour of addressing you, many men come up to Guy's conscious that there are such things as examinations but regarding them as remote contingencies, find that "distance lends indeed enchantment to the view," and believing that it will be time enough to consider about medical tests when medical work has been more fully entered on, find out their mistake.

This indifference to examinations was, I am bound to say, my delusion on entering as a student, and for a long time afterwards; *now* sad experience has made me wiser in this respect.

If men would only believe that the process of learning anatomy is really one of self-examination—and of constant self-examination—thus really involving a mental training for which two years would be all too short a time—there would not be the rush and cram that now take place a month or two before the examinations.

And I believe that until you can impress this fact on the students, and get them to acknowledge its importance, and, above all, *act* up to its teaching, you will never put an end to the disappointments and surprises that follow the publication of each list of passed men. Some student who has gone in for the cram principle is surprised to find that some man of acknowledged inferiority has been successful where he himself has not, and is consequently disposed to cavil at the hospital teaching as being the cause of his failure—instead of attributing his want of success to his own carelessness.

Because an examination is eighteen or twenty-four months off it does not follow that it is any the less difficult to pass when it does come, or that the student is entitled to spend the great part of the time allowed for preparation for it, in making himself acquainted with the interiors of the various places for entertainment or for assuaging thirst which abound in the metropolis. The student ought to remember that the day of examination comes as *surely* as it seems to him to come *slowly*.

In my next I will endeavour to discuss the subjects required for examination.

Your obedient servant,
AGATHOS.

To the Editor.

Sir,—Will you allow me space in your valuable columns for a word? It is not a complaint, but a request I wish to make.

Our authorities have indeed done much, very much, for our convenience in the improvement of the dissecting-room and its surroundings, and it is unwise just now to ask such wholesale favours as "Amicus," and "Edendum est Vivamus" demand. But, sir, amongst a large number of men, who do not say much, there is a great need felt for a room which shall be open after 5 p.m. Some using the museum up to this hour, have missed a train and cannot leave till after 6 p.m. Others—and they are not a few—remain to the Bible Class, and must rendezvous somewhere till 6.15, the time of commencing, arrives. This might be remedied by kindly leaving the room opposite the library open till 6 p.m. There would be no additional cost, and it would be a boon to many.

Your obedient servant,

MODERATION.

Guy's, June 1, 1874.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Diploma of Fellow.

Second Examination.

Pathology, Therapeutics, and Surgery.

May 28th, 1874.

From 1 to 5 o'clock P.M.

All four questions must be answered

1. In which directions may the Astragalus be dislocated? and how does this accident usually occur? Describe the attendant signs, possible complications, and consequences of this injury; and state how you would deal with it according to circumstances.

2. What is meant by Degeneration? Describe the minute characters presented by its principal forms in those structures in which they most commonly occur.

3. Describe the varieties of inguinal Hernia which occur in association with an open state of the vaginal process of the peritoneum in both sexes.

4. A man received a severe kick in the Perineum, which was rapidly followed by considerable swelling there and retention of urine. State the probable nature of the injury and its immediate and remote effects, the mode in which you would investigate such a case, and the treatment you would adopt.

The following gentlemen passed :—

Mr. C. H. Golding Bird, B.A., M.B.

Mr. G. F. Kirby Smith.

The following gentlemen passed the Membership Examination in May :—

Mr. Heddy.

Mr. D. B. Lees, M.B., Cantab.

Mr. Talbot.

APOTHECARIES' HALL.

The following questions formed the written examination at a recent date :—

Medicine.

1. What are the symptoms and treatment of Delirium Tremens? How does the delirium of that disease differ from other forms of delirium.

2. Give the diagnosis, pathology, and treatment of Chronic Pneumonia.

3. Give full and pathological definition of the term Fever, and state the general principles and treatment in that class of diseases.

4. Describe fully the causes and diagnostic features of the more important forms of Dyspnœa.

5. What are the indications for the treatment, and best means to be adopted in the management of Septic Poisoning?

6. Describe the morbid appearances that would be found after death from rupture of an aneurism in the Arch of the Aorta Median.

Midwifery.

1. What are the causes, symptoms, and treatment of Retained Placenta Median.

2. Describe briefly the mechanism of Parturition, the child being in first position, and give diameters of Female Pelvis.

3. What are the causes, symptoms, and treatment of Puerperal Mania.

4. What are the symptoms, pathology, and treatment of Pertussis.

Forensic Medicine.

1. What are the symptoms of Poisoning, and P. M. appearances of Arsenic?

2. Describe symptoms and treatment of poisoning by Belladonna.

3. Describe the nature, objects, and value of the Hydrostatic test.

4. How would you detect in the contents of the stomach the presence of Hydrocyanic Acid and Corrosive Sublimate?

MEDICAL WARDS

New cases admitted from May 28 to June 3.

STEPHEN.

5—Ulceration of Intestine (?)
6—Rheumatic Fever
10—Morbus Cordis—Diastolic and Aortic Bruit
31—Skin Eruption—Nature unknown (?)
32—Idiopathic Pyæmia (?)—Death
40—Typhlitis
42—Broncho-Pneumonia

JOHN (Clinical).

16—Pneumonia

MIRIAM (Clinical)

19—Intestinal Obstruction
21—Retention of Urine
24—Ascites
28—Puerperal Thrombosis of Iliac Veins, extending to Cava Inferior

ADDISON

1—Rheumatism
5—Phthisis
9—Tuberculous Ulceration of Intestines
18—Pneumonia

MARY

12—Tuberculous Ulceration of Intestines
24—Erysipelas

PHILIP.

3—Morbus Cordis
6—Rheumatism
7—Bronchitis
10—Paralysis
11—Phthisis
12—Gastralgia
16—Glosso-pharypgeal Paralysis
19—Morbus Cordis
20—Morbus Brightii
22—Asthma
27—Carcinoma of Stomach
42—Pleurisy
44—Morbus Cordis
49—Albuminuria
50—Ague

In Memoriam.

She sleeps! Our busy corner in the great world pursues its wonted business. The life and health grapple, as it ever has done, and, thank God, ever will do, with disease and death; but one for whom to-day we mourn, who has for nine years past been one of our active helpers in the fight is now laid low. Sister Clinical is dead!

After an illness of some weeks' duration, she had gone about a fortnight since for a few days change of scene and air. She soon returned from a rest, which it is *now*, alas! at any rate, too evident was utterly inadequate for the restoration of her strength. With a heavy ward, and the charge of a case of ovariotomy, her powers again soon flagged. On Monday week she felt unwell and remained in her room, she did not improve; on Thursday week she took to her bed, and on Sunday last, at 10 a.m., she finished her useful life.

To Guy's men of the last decade this announcement will, we know, be the cause of unfeigned sorrow. For four years in Stephen, and five in Clinical, she worked her way so quietly, so unobtrusively, that she might almost missed the recognition due to her value. The quiet ones are so outmatched by the self-assertion necessary in our social life and which they do not possess. She did not miss it. Her knowledge of the patients entrusted to her care, and her unceasing anxiety for them could not be overlooked, and our hospital staff, and the roll of house-physicians from the first even to the present ones, aye, and the nurses, and the patients, too, all, indeed, who came in contact with her, would, we are sure, unanimously endorse this faint testimony to her worth.

And now what shall we say of her? Nothing! Well, only *In Memoriam*. The realisation by all who have known her of the depth of meaning in these words will be a tribute of respectful and silent affection, such as no pen can record, no monument lay bare. For memory has many aspects—

"Those of the many tongues, the myriad eyes"

while a written memoir can only attempt, at best how feebly! to express to others some of the lights and shadows which gave force and beauty to the original in one of very many mental negatives. What need to go through so rough a developing process here. Each of us has his own negative, his not ours; and while we all in common are free to express the perfect manner in which she did her duty, each no doubt will care to remember her by those special traits most apparent to himself, and chief of those to the writer was her cheerful kindness. Sure index that of a deeper life, which made her what she was. Farewell! a long farewell!

"The Battle of our Life is brief,
The alarm—the struggle—the relief—
Then sleep we side by side."

CRICKET CLUB.

This match was played at the Palace, on May 30th, and won by Guy's by 71 runs. Williams, Lewis, Gray, Power, and Hetley batted well. The fielding of the Guy's Eleven was good.

GUY'S v. CRYSTAL PALACE.

Guy's

H. Williams, b Boult	20		
J. A. Lewis, hit wicket, b Soden	32		
W. Gray, c and b Sodden	32		
J. Boughton, c O'Dell, b Boult	1		
G. Power, b Soden	58		
P. E. Wallis, run out	4		
H. Hetley, b Duff	26		
J. H. Earle, run out	3		
C. J. Mitchell, c Morton, b Boult	8		
C. E. Bell, b Boult	0		
J. Reader, not out	7		
Byes 8, leg byes 3, wides 4	15		
Total	195		

Crystal Palace.

J. Turner, b Gray	13		
W. Newton, b Mitchell	0		
F. H. Boult, s Lewis, b Gray	43	not out	11
C. W. Burls, b Power	5	c and b Boughton	29
A. Morton, c Mitchell, b Earle	36		
Duff, b Power	1		
O'Dell, b Power	0		
F. Sodden, b Earle	15	b Wallis	4
Thornthwaite, thrown out by Boughton	4		
Carr, not out	1		
Franks, b Gray	2		
Byes 2, leg byes 1, wides 1	4	Wides	2
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MARRIAGE.—On Apirl 29th, Charles S. Ticehurst, Esq., M.R.C.S., L.R.C.P. (late House-Physician), to Miss Alice Joy, daughter of — Joy, Esq., of Maidstone.

COMMUNICATIONS RECEIVED.

Mr. C. Barlow, Mr. C. H. Golding Bird, Mr. T. Walter Evans, Dr. Pye-Smith.

We are compelled to leave over Dr. Pye-Smith's lecture till next week.

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Guy's

Hospital Gazette.

VOL. IV.—NO. 10. SATURDAY, JUNE 13, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

BEFORE one can say that the teaching of Surgery is deficient,and that it is common for men to become surgeons who know, practically speaking, nothing of surgery, it is necessary to look thoroughly into the value of the appointments which are *compulsory*, and it is unnecessary to go further, for it is readily proved that a large number of men qualify annually who have really failed to avail themselves of the opportunities which their school holds out to them for seeing practical work beyond that part which is essential for the filling up of their schedules. The number of men who never hold an appointment in surgical work beyond dresser in the surgery and assistant-surgeons' dressser is lamentable, for surely it is to be regretted that a man may become a Member of the College of Surgeons' when he has never reduced a fracture of the lower extremity or a dislocation of such, when he has never dressed a wound of any magnitude, nor ever had under his charge a case of any import, when he has really never taken part in any operation worth naming, beyond the amputation of a finger or such, and many there are who qualify and have never passed a catheter or seen an operation for hernia. How many there are, too, who have never *seen* a single operation performed on the eye, however simple. Need we ask the question. Is this the state of things that ought to exist ? Let us hope that with the advancement of all sciences and arts something may be done towards improving the existing regulations for the study of Surgery. Not in the direction of increasing the tendency which runs so high to the development of grand theories and pretty hypotheses, let these follow on practice, for their use assigns that relation. Of what use is a man to a patient, suffering from some tumour which with Surgical skill could be removed, when instead of removing it, he speculates as to the pathology of that tumour, its microscopic anatomy, and all the theories relating to the laws which cause and govern its growths ; it is good for his mind, but is poor consolation for his patient, and yet the present system of study tends severely to produce this state of things, for while there are the most ample opportunities afforded for the study of Surgical Pathology in all its branches, the opportunities for practical work are as deficient. Let any person come forward who has lived with various country general practitioners, and he will be able to give evidence of the lamentable ignorance there is abroad of practical surgery. How many there are about this and other countries disabled and cripples for want of proper surgical treatment, although they will tell you that they have been to "Dr.——," and you find on enquiry that "Dr." to be an M.R.C.S. There are many whose eye-sight has been lost to them for ever through, in some cases, want of proper skill and knowledge on the part of their attendant. Let any one person see this and give it a few moments' thought, then there cannot exist any longer a doubt in his mind as to the motives which have prompted us to make these remarks on the insufficiency of the present method of qualification in Surgery, yet the rapid strides that are being made carry men no nearer the desired standard ; the increase of work in the study of the microscope and of pathology will not enable the student on leaving the hospital to excise a joint, reduce a dislocation, or amputate a limb as it ought to be done, and after all that is to be said in favour of them, which counts the most important ? Surely 'tis a much higher aim, and a more noble qualification to be able to relieve the sufferer than to be able to explain to him the cause, nature, and pathology of his ailment, and then leave him. Why cannot there be some reformation in the arrangements for practical teaching, so that it may be rendered impossible for a man to present himself for an examination, pass, and then be qualified, when he has only seen such practice and taken such part in operative surgery as is calculated to give him sufficient knowledge to fulfil moderately the functions of a nurse, assuredly there is nothing much beyond this to be gained by holding the appointments of dresser in the surgery or assistant-surgeons' dresser. The more we consider these points the more firmly do we adhere to the assertion we made in reference to the wide difference existing between qualification for examination and qualification for practice.

LECTURES ON MEDICINE.

—o—

By DR. WILKS.

(Continued from page 65.)

DISEASES OF THE HEART.

Now we will take each of these more usual valvular diseases separately, and begining with the *aortic obstructive*. We have here the case where the valves offer some impediment to the flow of the blood, and produce a murmur; at the same time being perfect enough to close and prevent regurgitation. Under these circumstances we have a systolic murmur heard at the base of the heart and carried across to the sternum to the second right costal cartilage. The natural first sound of the heart heard at the apex is not quite so good as in the healthy heart, and is partly covered by the murmur here faintly heard. The second sound also which is produced by the closure of the sigmoids is indistinct. The heart is hypertrophied, and the apex beat is observed to be lower than natural. In a simple case with marked obstruction, the pulse is often small, slow, and regular.

In *aortic regurgitation*, there is generally present the obstructive murmur just mentioned, and in addition to this a diastolic murmur replacing the second sound; there is, therefore, a double or see-saw murmur heard over the base of the heart where these two sounds are produced; the second or diastolic sound is carried downwards with the current of the blood, sometimes towards the apex, but more generally straight down the sternum, which is almost in contact with the aorta.* The heart is much enlarged, known by the increased area of dulness on percussion, and by the apex beat being much lower than usual, and to the outside of the nipple, to which spot it would be necessarily carried, The pulse is very characteristic in this disease; having two well-marked features, due to the enlargement of the heart, and the incapacity of the aortic valves. First of all the pulse is regular, large, and full, visible to the eye, and to be felt in the smaller vessels, where it is usually not palpable, and secondly, this large full pulse suddenly collapses under the finger; it is called a receding, collapsing, jerking, or kicking pulse, some have called it water-hammer pulse, after a toy of that name. This remarkable recession is often much intensified by holding up the arm above the head, whilst the patient is in the recumbent position. The throbbing of the vessels is often a painful symptom felt by the patient, and may often be observed in the retinal vessels by the aid of the ophthalmoscope.

Mitral regurgitation is known by a systolic bruit, heard best at the apex, and carried round the chest under the axilla to the angle of the scapula, where it also is distinctly heard. The heart is somewhat enlarged; its rhythm may be altered in various ways, and the pulse very frequently is small and irregular.

Mitral obstruction is characterised by a bruit which some call diastolic, but it is more usually styled presystolic, because it is not synchronous with the diastolic sound of heart. It is caused by the current of blood passing through a strictured mitral orifice heard best at the apex, and never at any distant spot from it and rarely behind; it is often harsh and prolonged, and has the name "churning" given to it, but often varies much in character from day to day. The existence of this bruit has been generally overlooked until the present time, but its existence is certain, and the proof depends upon its rhythm, localization, and after death upon the fact of the extreme hypertrophy of the auricle. The principle reason for its being hitherto overlooked has been suggested by Dr. Fagge, who has shewn how the first sound of the heart is necessarily altered in this disease of the mitral, and from being a prolonged tone becomes an insignificant short sound, whilst at the same time the slowly contracting auricle produces a prolonged bruit; in consequence of this, the latter sound was regarded as the systolic, and the short systolic as a diastolic sound. I have no doubt that herein lies the true explanation of our former ignorance. A difficulty also against the ready acceptance of the modern view was found mainly in the fact of the bruit being a lengthened one when the contraction of the auricle was known to be momentary, but this is now explained on the supposition that the rhythm of the heart is really altered, and that the auricle does, when hypertrophed, more slowly contract, and this is now proved almost to demonstration by the tracing of the sphygmograph.

As regards the right side of the heart, I need merely mention the case of tricuspid regurgitation, met with in long standing bronchitis, where a bruit is heard over the sternum, and the fifth right costal cartilage. The veins in the neck are much enlarged and pulsate.

Of all these diseases of the valves, the obstructive forms are of less importance than the regurgitant; the aortic obstructive being of least importance, and may exist for years without any accompanying symptoms; a mitral obstruction with a compensating enlargement of the auricle, may also endure for years; regurgitation through the mitral is of far more consequence, though this appears to be less important than regurgitation through the aortic orifice; a lesion not infrequently accompanied by sudden death.

The same causes which give rise to murmurs often produce a thrill which can be felt by the hand, more especially in cases of mitral contraction or stenosis. If present it assists in the diagnosis, more especially in the last mentioned condition, where being diastolic in rhythm, it can be entirely separated from the systolic impulse. Not to complicate the subject, I will not enter more fully into the subject of altered rhythm or the question of reduplication of sounds. Nor need I dwell upon the mode of production of murmurs since Dr. Fagge has already explained this to you in a lecture published in the *Guy's Hospital Gazette*. He told you how exepriments had been devised for this purpose of letting water out of a vessel through openings in its sides, and that it was found that no sound was produced at these orifices by the friction of the water, but at a point beyond, where the water pouring out into a larger space, broke up into streamlets, and its particles jostling against one another produced the noise. In the case of narrowing of the aortic orifice, therefore, it would not be the blood passing through the chink that would produce the murmur, but the subse-

* Dr. Balthazar Foster has sought very ingeniously to explain the different course of the bruits by the particular valve which is affected. When he says, the left-handor mitral sigmoid valve is diseased, the blood is carried down into the ventricle and the bruit transmitted to the apex, whereas, if the right-hand and posterior sigmoids are affected, the blood impinges on the septum and the sound is carried down the sternum. He further says that the first-mentioned case is the less important since the sigmoid affected has no coronary artery, and therefore, its disease would not interfere with the heart's supply of blood during aortic systol.

consequence portions of the lung become dense and air-less. We find the patient's breath become shorter and shorter every day, with indications of consolidation of the lower lobes, especially of the right side. The lung, after death, is found very dense, hard, and air-less, and sinking in water. The liver also becomes enlarged in heart disease, and therefore, you must not regard this enlargement as a complication, it is a necessary consequence of the enlargement. When seen on the post-mortem table, its appearance is very striking, and is known by the name of "nutmeg." The long continued engorgement of the hepatic veins causes a stagnation of hæmatine in the vessels and cells, as well as a stagnation in the biliary ducts, and this in connection with an early fatty degeneration of the circumference of the lobules, gives the varied colours of white, yellow, and red, the appearance of a nutmeg. The spleen is larger than natural and very hard. The kidneys are large and coarse-grained. The stomach is often intensily injected, and its surface covered with mucus. I need not enter here upon another class of cases where the valves are affected by endocarditis, and where the symptoms are not due so much to mechanical impediment in the circulation as to a pollution of the blood by particles of fibrin and inflammatory matter washed off from the valves. These cases of ulcerative endocarditis are fatal by the production of severe constitutional symptoms, not unlike those of pyæmia, and after death we find fibrinous masses or infarctions in the lungs, in the spleen, and in the kidneys.

PHYSIOLOGY OF MOTION AND SENSATION.

—o—

BY DR. PYE-SMITH.

LECTURE XI.

The terminal organ which receives impressions of LIGHT is the *retina*, the conveying fibres those of the *optic nerve* (and tract), and the central ganglion the *optic lobes*. The physical object which causes the impression is undulating ether. This can produce the sensation of light by no other means than by retina, optic nerve and brain; but the sensation may be produced by other stimuli than its proper physical object, as we shall see when considering subjective vision.

The simplest form of eye is an expansion of the optic nerve, with pigment behind it to absorb rays which pass through, and a transparent skin to protect it in front. Animals with such an organ can appreciate the *intensity* or amount of light; but probably neither its *quality* (colour), nor its *direction*; and certainly not the *forms* of illuminated objects, since the rays reflected from them are not brought to a focus.

The more perfect organ of sight, the human eye, may be considered physiologically as made up of the following parts:—

1. For *protection*. The supra-orbital and external angular processes, the nasal and malar bones guard it from external violence. The eyebrows act as penthouses to carry off the sweat to the cheeks. The eyelashes shade from glare, the iris contracts or expands as the light is excessive or deficient, and the eyelids shut it out altogether. The lacrymal secretion

quent breaking up of the stream into currents as it passed into the larger vessel beyond. This fact quite accords with what many observers have stated, that bruits are heard better a little beyond the point of obstruction than at this spot itself. The experiments are full of interest, although they have not yet been made applicable to all cases of blood murmurs.

The next point to observe is that owing to the changes which the cavities undergo, the difficulties arising from the impairment of the valves is, to a certain extent, compensated, and thus the circulation through the narrowed aortic and mitral orifices being facilitated by the hypertrophied ventricle and auricle the damaged organ may be equal to its necessities for many years, but when the ventricle shall give way from being overcharged, or from degeneration of the tissue, then the failure of the organ is discoverable and the well-known cardiac symptoms ensue. It is true that the impediment to the circulation by inefficient valves will in time affect the whole system, but it is also true that it is comparatively unfelt, whilst the heart's cavities themselves remain sound. It comes, therefore, practically to this, that the symptoms are due rather to impairment in the heart cavities and tissue than to the valves; and so we shall find that our treatment is directed solely to the state of the heart itself since nothing can affect the valvular apparatus. It follows also that if the cavities were primarily affected, we should at once have the very worst forms of heart disease. This is so, and in consequence, cases where the heart has become dilated or fatty are the most formidable of cardiac affections, and they are those where very often no abnormal sounds are audible, as the valves are still intact. These degenerations may come about in many ways. As regards the effect of violent exertion, this is still a question in the profession, but there is no question about many causes which tend to impoverish the tissue; as age, fatty degeneration produced by alcoholism and obesity in general. Sometimes excessive hæmorrhage appears to have weakened the heart, and when the symptoms have been preceded by acute rheumatism, we may suppose that there may have existed an inflammation of the muscle or a myo-carditis; which may have led to impairment by a fatty change or productive of a fibroid tissue pervading its structure. In cases of dilatation the closing of the mitral valve may be interfered with, and then a regurgitant bruit will exist; it will, however, in this case be a consequence and not the prime cause of the cardiac disease. If no bruit exist, it is clear that the diagnosis must be founded upon the symptoms, and we shall see that these are equally important with the local physical signs gained by the stethoscope.

Before giving you the symptoms it will be advisable to mention the other physical changes which the body undergoes in consequence of the impeded circulation. If the mitral valve be affected and the auricle after a time be unequal to overcome the difficulty, the blood is thrown on the lungs, and the whole system becomes gorged, as well as all the other organs of the body. In aortic disease if the patient do not die suddenly, the same result eventually occurs. First we notice the engorgement of the lungs, which is so great that the vessels often give way, and blood is spit up; should the patient die, large round hard masses of black blood are found effused in the tissue, this is called apoplexy of the lung. If the blood do not actually burst through the vessels, the engorgement goes on until the capillaries are completely blocked, and the alveoli of the lungs become almost obliterated by the swelling, and in

keeps the surface constantly moist and clean, being distributed on the ball by the constant blinking of the lids, and carrying minute impurities away by the ciliary current which sets towards the nasal duct. Lastly, the sclerotic and cornea form the proper sense-capsule protecting the retina ; and, when the eye is less completely protected by the orbit, this tunic is strengthened by plates of bone.

2. For *movement*. The six ocular muscles enlarge the field of vision, and enable us to combine muscular sensations with those of sight, thus aiding our perception of direction and locality. The conjunctiva acts like the synovial membrane of a joint in facilitating the motions of the eyeball.

3. In order to give sensations of form as distinct from those of diffused light it is necessary that the rays from an object should be brought to a focus on the retina, so as to paint its image there, as in a camera obscura. For this end the refractive media of the eye are designed. The cornea and aqueous humour (both of which may be neglected for aquatic animals, since the refractive index of the latter is practically the same as that of the medium through which the rays of light reach their eyes) and the vitreous humour together produce a reflection of the rays which is constant in the same eye ; so that the cornea may be regarded as practically only a protection the aqueous and vitreous as only mechanical supports of the globe. The physiologically important refractive organ is the bi-concave crystalline lens, which converges the rays of light upon the spot where the axis of the eye-ball meets the retina. In order that it may alter its focal power according to tho distance of objects, its front surface is constantly kept flatter than natural by the tension of the elastic ligament of the lens. When the ciliary muscle contracts, this ligament is released, and the lens becomes more convex. (The precise mechanism of the muscle appears to be what I have shown in this diagram.) This may explain the sense of fatigue when looking at near objects though the convergence of the eyes which also takes place must coutribute to the effect. You can verify this "accommodation" of the lens by looking into another person's eye while a candle is held a little to one side. You will see the flame reflected from the cornea, from the front of the lens, and (inverted) from the concave mirror formed by the back surface of the lens with the black choroid behind it. Then if you move the candle nearer your friend's eye, you will notice the second of the three images move nearer the first, as he contracts his ciliary muscle so as to allow the front of his lens to become more convex.* Very careful experiments show that the posterior surface also bulges at the same time, but to a much less extent.

4. *Blood-vessels*. These, with a litle connective tissue, form a vascular tunic (the choroid) which nourishes the retina and its layer of pigment, just as the pia mater does the brain. It has also the same position between the fibrous protective tunic (the sclerotic, answeringto the dura mater) and the nervous tissue.

Nerves. These are branches of the portio dura which close the eye : the third pair which opens it and moves the globe in various directions : the sensory part of the fifth distributed to the cornea and conjunctiva, branches from the lenticular ganglion which dilate and from the third nerve which contract the pupil, and motor filaments of the long ciliary nerves to the ciliary muscle.

5. There remains the essential part of the end-organ, the *retina*. Far from being a mere "network" of nerve-fibres, these drawings show you the complicated structure, our knowledge of which ie chiefly due to Max Schultze, the eminent professor of anatomy at Bonn, who has been lost to science within the present year. Near to the hyaline membrance (m. limitans interna) which separates it from the vitreous, come non-medullated nerve fibres all convergiug towards the optic nerve. Then follow some branched and nucleated ganglion-cells, then alternate layers of round nuclei and granules, and lastly "Jacob's membrane" of rods and bulbs which lie immediately in contact with the hexagonal pigment cells of the choroid. These proper elements or parenchyma of the retina are supported by very delicate interstial tissue like the neuroglia of the brain.

The retina is not quite uniform. Towards its anterior edge (ora secreta) the rods becomes less numerous and the inner layers thinner. At the "papilla" or "optic disc," the place where the retina is continuous with the optic nerve, all its proper elements are absent, and the nerve fibres converging from every part take its place : they pass out from the eye-ball and immediately acquire a medullary sheath. Thirdly, at the depression in the centre of the retina known as the yellow spot the cones are very small and closely set, while the rods and inner layers are almost completely absent.

Having thus reminded you of the most important anatomical fact concerned, I turn to consider the physiology of vision. Comparing the eye to an artificial optical instrument, we have no difficulty in recognising the function of its protective case ; of the muscles which direct its axis ; of its apparatus for keeping the surface bright, clear, and transparent ; of the uvea and choroidal pigment, which act like the black coating of the tube of a microscope ; and of the "fine adjustment," which alters its focal distance by increasing the convexity of the lens.

There are certain imperfections which you know have to be remedied in a microscope : how are they obviated in the eye ?

1. The media : lenses are now made which are practically uniform in transparency ; but the media of the eye are, as you kuow, made up of fibres, of altered epithelium and of mucous tissue. These do not incommode us, first because the continual movement of the eye prevents their constancy at any point of the field of vision, just as you may see into a field through the narrow chinks of a park paling by riding quickly along it : and, secondly, because we are used to these slight opacities, and notice them no more than we do the presence of our clothes, or the passage of food into the stomach. But when illness has rendered the nervous system over-sensitive we see the nuclei and the fibres which your microscope discovers in the vitreous, the cornea and the lens, as floating black spots in the field of vision. These have long been known as *muscae volitantes*.

2. Another defect of a dioptric instrument is dispersion of light, giving rise to coloured fringes. This is remedied in the microscope by combining lenses which correct each other's chromatic aberration. The eye is not made achromatic in this way, but the watery media which it contains are much

* In old age the lens becomes flatter and less elastic, hence it cannot be made sufficiently convex for near objects, even when released from tension by contraction of the ciliary muscle ; and the defect must be remedied by artificial convex lenses. This condition is known as *presbyopia*. That of short sight or *myopia* depends, not on anything wrong with the lens, but on the eyeball being too long from front to back, so that distant objects are brought to a focus in front of the retina. The opposite defect (*hypermetropia*) when the antero-posterior diameter of the ball is too short, is also not uncommon in young persons.

less dispersive than any kind of glass, and the remaining imperfection is not noticed because the extreme rays of the spectrum into which white light is decomposed (red and violet)are the least brilliant and are overp owered by the stronger yellow and green central rays which are less dispersed. That chromatic aberration does, however, exist is proved by looking at a flame through cobalt glass which does not allow the central rays to pass.

3. A third defect of a lens is spherical aberration. This is partly remedied by the combinations which make up an "objective," partly by the "stop" you find in the eye-piece of your microscopes, which cuts off the peripheral and most aberrent rays. The elliptic curvature of the crystalline lens diminishes this defect to some extent, and the iris acts (even when fully dilated) as a permanent stop.

4. Again, you know that I recommend you never to buy objective glasses which take to pieces, bocause in screwing them together you are sure to fail in making the centres of the several lenses correspond. Now, the centreing of the human eye is not so perfect as that of a well-constructed object-glass.

5. Lastly, the curvature of the cornea is seldom perfectly true. When very irregular, this causes the congenital defect of vision known as astigmatism, but most of us have the same defect in a slighter degree.

Both these last-named imperfections are practically remedied by the constant movement of the eyes, and by the fact that exact vision is only possible at the small central region of the yellow spot.

TREATMENT OF PARAPHYMOSIS.

Our text-books teach us that paraphymosis is to be treated by taking the penis between the index and middle fingers of both hands, which are interlocked, and pulling the prepuce forwards, whilst the thumbs, placed over the glans penis, forcibly presses upon it backwards. One can scarcely imagine a more painful operation, when (as is occasionally the case in our out-patient room) it is done without chloroform; frequently, too, it is ineffectual, and then the preputial is divided.

In two cases—both of five days' standing—Mr. Colley has adopted, with complete success, a far simpler mode of treatment. Mr. Colley applied a narrow elastic band (Esmarch's, it might be termed) round the penis beginning at the glans, and pass back over the constricted prepuce. After leaving this on for a minute or so it was removed, and then in each case the prepuce was readily brought forward over the glans.

UNITED HOSPITAL FOOTBALL CLUB.

At a meeting of this club, held on the 27th ultimo, it was resolved that there should be a challenge cup for the champion hospital, and that a week in the month of February be set apart for the playing-off of the ties, and that for these matches the following mode of scoring be adopted :—3 touchdowns (rouges) equal a try, and 3 tries equal a goal.

The ties were drawn off as follows :—Guy's v. Kings's, St. George's v. Westminster, St. Thomas's v. University, St. Bartholomew's v. St. Mary, Charing Cross v. Middlesex, London a bye.

CORRESPONDENCE

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,--Many and great are the advantages offered to students who work in the chemical laboratory. These would be greatly augmented if the "powers that be" would grant them the boon of shade. The heat of the sun in the laboratory is intense, and certainly more or less detracts from a man's ability to work. Provision has been made against heat in the chemical theatre and elsewhere, why is there none in the laboratory, which is occupied by so many in the hottest part of the day?

Your obedient servant,

PHILANTHROPIST.

To the Editor.

Sir,—I beg to offer a few remarks in reply to "Moderation." He speaks of men *missing* trains from being in the museum till 5 p.m. The remedy is very simple, if they will but leave the museum in time to *catch* the trains instead of increasing the work of the already heavily-burdened officials of the hospital by keeping them until 6 p.m.

As to the Bible Class, a class which "Moderation" must remember is on subjects entirely *foreign* to the hospital-teaching, surely the inconvenience he complains of might be obviated by having the class at 5.15 instead at 6.15, or by renting a room especially for it. It might be right that facilities should be given by the hospital to those gentlemen whose early education in religious matters has been unaccountably neglected, but I am sure that many men will agree with me in deprecating a *parade* of religion, which creates invidious distinctions amongst the students.

Your obdient servant,

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CRICKET CLUB.

We have been requested by the hon. sec. of the Guy's Cricket Club to publish the following letter, and hope that by voluntary contributions the amount required may be raised by an early date :—

Lewisham,

June 8, 1874.

Dear Sir,—I am requested by the Committee of the Lewisham Cricket Club to inform you that they feel much surprised at not having received the amount of rent for cricket field at Ladywell, for 1873; and that unless the amount be paid by June 18 proceedings will be taken to recover the same.

I am,

Yours very truly,

F. R. INGERSALL,

Hon. Sec.

— Boughton, Esq.

SURGICAL WARDS.

—o—

New cases admitted from June 4 to June 10.

ACCIDENT

5—Sprained Ankle
6—Concussion
11—Lacerated Wound of Leg
13—Fractured Skull
18—Spinal Concussion
30—Fractured Tibia and Fibula

CORNELIUS

3—Fractured Jaw
4—Injury to Abdomen
5—Fractured Tibia and Fibula
6—Severe Injury to Foot
19—Injury to Abdomen

LYDIA

6—Epithelioma of Mouth
7—Ulcer on Leg
8—Carbuncle

MARTHA

16—Cancer of both Breasts

JOB.

21—Deformed Leg
23—Diseased Ankle

LAZARUS

11—Ulcer on Heel

NAAMAN

8—Cancer of Neck Secondary to Tongue
13—Stricture
17—Cavies of Os Calcis
18—Recurrent Cancer of Thigh

LUKE

No Admission

DORCAS.

7—Retention of Urine—Puncture per Vaginum
10—Strumous Degeneration of Phalanges of Index Finger
13—Disease of Spine
14—Cancer of Breast
15—Necrosis of Tibia
16—Fractured Femur
17—Phymosis

CHARITY.

8—Laryngitis
18—Abscess of Leg

GUY'S HOSPITAL ATHLETIC CLUB.

The sports of this club will take place on Friday, 19th June, at two o'clock, at the Star Gronnds, North End, Fulham, when the following events will be competed for:—100 yards flat race, 1 mile flat race, putting the shot, long jump, 250 yards flat race, throwing the hammer, half mile, quarter mile, two miles, high jump. In addition to the above, there will be a 440 yards handicap flat race. Enterance fee, 2s. 6d. Entrance fees to the other events are 1s. each, or 3s. to include the whole, except the handicap. Entries close on 10th June, to Secretary Tickets can be had by Members, on application to the Secretary.

The United Hospitals' Athletic Club Sports take place at Lillie Bridge on 27th June.

HOSPITAL SUNDAY.

The Council of the Hospital Sunday Fund met at the Mansion House on Thursday last, to make the necessary arrangements for the 14th. The Lord Mayor presided, and at the conclusion of the ordinary business, the secretary stated that a very large number of ministers of all denominations had promised their services and hearty co-operation, and so far there was every reason for believing the collection would be larger than that of last year. The Lord Mayor at the particular request of the Council consented to proceed in state to the morning service at St. Paul's, and the afternoon service at Westminster Abbey, as his predecessor Sir Sidney Waterlow had done. It was resolved to apply to the Aldermen, Sheriffs, and Common Councilmen to accompany him. It was also thought advisable to make an appeal to the City Companies to support the fund. A hope was expressed by several members of Council, that the Distribution Committee would, when the proper time came, bear in mind the grounds of discontent urged by the friends of the dispensaries, and some few hospitals which either did not paricipate at all, or only to a very small extent in the collections of last year. It must indeed have surprised the supporters of those institutions whose accounts showed care and economy in management to learn that they had no claim on the fund. Managing Committees it appears, are yet to be found, who seem disinclined to incur the responsibilities of running into debt, simply because it may be thought necessary to show how many thousands are relieved during the year, and thereby make a strong case for an appeal to the benevolent.—*The Medical Press and Circular.*

APOTHECARIES' HALL.

Mr. C. Rees passed the final examinatton on Thursday, the 4th inst.

Mr. Sykes passed the first professional examination on Thursday, the 4th inst.

COMMUNICATIONS RECEIVED.

Mr. Alfred Meor, Mr. A. M. French, Dr. Newton Greenwood, Mr. F. Manser, Mr. John Ellerton, Dr. William Locke.

Ardent—We cannot insert communications unless accompanied with name, not necessarily for publication.

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25—List of Pupils who have passed the Several Medical Examining Board
26—List of Prizemen and Medallists
27—List of Pupils who have received Appointments at Guy's Hospital

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Guy's

Hospital Gazette.

VOL. IV.—NO. 11. SATURDAY, JUNE 20, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

WHATEVER may result from our observations on the existing system of qualification, one thing is perfectly sure, namely:—that reform may be as extensive and sweeping as it will, and Guy's Hospital will be able to hold out advantages far beyond anything that is sure likely to be included in the catalogue of appointments, to be held before admission to examination. It is impossible to look over the list of appointments as it now stands at our hospital, and (appreciating each one thoroughly) not feel regret that so many men as there are, should annually go away from our walls without having availed themselves of the excellent chances held out to them in their institution. Still it is so; men come and go, and a majority go away without ever having held an appointment above such as could be obtained at any of the minor hospitals. Ought a man ever to claim the title of "Guy's Man" when he has really never seen half the practice that he is invited to, going on within her walls? Certainly not, it is not right; where are the extra advantages of belonging to such an institution in this case? And of what benefit are they to the student? Surely a man is utterly unworthy of the name of "Guy's Man" when he leaves his training before he has fairly commenced it, although the regulations at the Royal College of Surgeons may permit him to do so; still, for the honour of the institution to which he belongs, and for his own benefit, until he has laid hold of the opportunities held out to him by his hospital for seeing and participating in that which is calculated to qualify him for something far beyond his final examination, he ought never think of going into practice. In many instances a man regrets that he did not learn more in his boyhood at school, so surely do many regret that they so imperfectly carried on their studies at their respective hospitals, and have in such small degree availed themselves of the opportunities afforded them for practical instruction, and why the standing regulations should permit men to do so little, is something we, as Guy's men, so ill understand; possibly if there were to be any very extensive additions made to the compulsory part of the curriculum, many of the minor schools, &c., would have to collapse or find themselves considerably troubled as to the means of meeting the pressure, and we must bear in mind that these regulations, coming from the College of Surgeons, would affect the large as well as the small schools, and, perhaps, in this may be found the reason of their lightness. Still that is no argument in favour of men not aspiring to anything beyond that required of them by the college examiners. What is it that has made the name of Guy's stand in its present position in the Medical and Surgical world? Not the long list of names of those men who only fulfilled that which was compulsory, they have done nothing ever to redound to her credit; it is not by them that the name of "Guy's" has become famous, but by those who, *regardless of what was compulsory or optional*, took all as alike compulsory before they could consider themselves in any way competent, those who held all the appointments, thereby profiting by the privileges belonging to all as students of Guy's. Why not, then, all try and imitate in a measure the example of these men, and throwing off all regard for the limits of the compulsory portion of the curriculum, aspire to something higher, and take similar advantages of the extensive range of practice open to us in this our hospital?

We must for a time leave this subject. The few scanty remarks that have been offered by us will, we trust, be taken in the spirit in which they have been made. It is not for us to dictate any remedy for the discrepancies we have mentioned, we cannot hope to affect the College of Surgeons in any way, but we can hope to have some influence over our fellow-students, and, if through our remarks only one out of the hundred students should be induced to go beyond the limits of compulsion in his work, we shall be more than repaid; for it is vexatious in the extreme to see the splendid opportunities held out by Guy's for practice, in many instances, passed by unnoticed by her men, when, if properly appreciated, not one man could leave her walls without confidence in himself and a rightful claim to the credit attached to his name as a "Guy's Man."

LECTURES ON MEDICINE.

—o—

By DR. WILKS.

(Continued from page 75.)

DISEASES OF THE HEART.

THE PULSE.—Now, before we proceed further I will say a few words about the pulse. I have been questioning myself whether I should not leave this very difficult part of my subject untouched, as it can only be learned by a practical method, and a thorough scientific attempt at its elucidation would take more time than we could allot to it. Very much has been written upon the pulse, and it forms so prominent a feature in the animal mechanism that every one thinks he has some knowledge of it; most medical men place their finger on the radial artery, and unhesitatingly pronounce an opinion upon the state of the circulation, and yet there have been those of great eminence who have maintained that it has required their life time to find the true indications of the value of the pulse. I think such an opinion is not surprising when you consider how many different circumstances are in operation to produce the pulse and to influence it. The sphygmograph is now informing us of a number of subtle changes and conditions which the finger could not detect, and its tracings are so fine and delicate that sphygmography is a study of itself. The instrument shows that the pulse is something more than a contraction and dilatation of a vessel; the line produced by a lever placed upon it being a very complex curve. You may easily see this by making use of the sphygmometer described by Mr. Wilkinson King, in Guy's Hospital Reports, which is nothing more than a bristle fixed over an artery by a piece of wax; if you watch the end of the bristle you may see the vibrations which are produced. You can imagine, also, if you pressed a long piece of stick downwards on an elastic pipe through which water was being pumped, that a visible movement would be seen at its extremity. Now, if the end of the bristle just named was wetted with ink and a piece of paper passed along behind it, a series of tracing would be produced.

You may conjecture what a number of conditions are present to affect the pulse, and how varied must be the tracings produced by it, and how every mark must have its corresponding cause, by considering for a moment what some of the conditions must be which are necessary for a free circulation through a blood vessel. Think, for a moment, of the heart as a large bag, pumping out fluid into a pipe; it is evident that the flow will be affected by the strength of the bag, by the amount of fluid it holds, and by the frequency of its contraction; it would also be affected by the state of the orifice of the pipe (corresponding to the aortic valves); and by the quality of the pipe itself, according to its rigidity, elasticity, &c., also by the freedom of the reception of the blood on the side corresponding in the animal to the capillary system, and even to the state of the vessels beyond this in the venous system; the pulse would be also affected by the quality of the fluid circulating, and again by the amount of force which was being used to keep the machinery at work—the nervous system. So you see in a simple piece of mechanism, showing the circulation of a fluid, there might be at least a dozen different circumstances present which would influence the pulse and leave their marks on the sphygmographic card.

The action of the heart itself must influence the pulse as well as the state of the orifice through which the fluid flows. It is also evident that the nature of the pipe would affect its character, and this was known to the older physicians, who regarded the blood vessel as a vital organ, and observed how its contractility was influenced by various morbid states of the system. They noticed how in inflammation, as in pneumonia, the pulse was quick and full, and at the same time, firm, owing to the increased tension of the blood vessel, shewn also by the great pressure which could be put upon it without extinguishing its impulse. They noticed also how in peritonitis where the sympathetic system of nerves acted on the circulatory system, the pulse might still be hard and incompressible, whilst it was small or wiry. I must ask you to guard against confounding a hard pulse with a merely thickened vessel from hypertrophy of its coats. Then it is very important to remember that in order to have a free circulation the receiving vessels must be ready to carry away all the blood transmitted to them, and so a gorged state of the capillary system will necessarily affect the pulse. You will find often in bronchitis and fevers that the blood does not flow readily through these distant vessels, the left ventricle thus transmits only a diminished amount of blood, and the pulse is small; you may ignorantly think in such cases because the pulse is small, that a stimulus is required to spur it on, but the object is to free the circulation beyond the arterial system, if this can be done. You will see by this example that the condition of the pulse points to many circumstances besides the heart which may influence it. That poverty of blood and hæmorrhage will affect the pulse, you must all have seen, and also that the state of the nervous system will influence it, as witnessed by the slow labouring pulse of cerebral disease. A number of qualities, therefore, have to be mentioned, including force, frequency, quickness, volume, as large or small, degree of compressibility hard or soft, according as the elasticity of the vessel is respectively increased or diminished.

Now if the *sphygmograph* indicate all these conditions, and even more, you may know how complex a figure must be its tracing, and how long must be the study of it before the value and signification of this tracing is known. The slightest changes in the conditions of the circulatory apparatus may leave their mark, and consequently minute changes, not appreciable by the finger, will be visibly drawn by this instrument. It is equally evident that this very delicacy of its action makes it quite unfit for ordinary use, and, therefore, it will probably never come into general employment. At the present time it is probable that there are not more than a dozen men in England who are competent to discuss the meaning of its figures, and amongst these we are proud to say are Mr. Mahomed and Dr. Galabin, two of our own men, both of whom have made original researches with the instrument. I can do no more than give you a very short and summary description of its action. Here is a tracing which is sufficient to show you that the movements of the pulse are somewhat more than a rise and a fall, you will see a perpendicular upper stroke, followed by a fall and a curve, and this immediately succeeded by another curve. Now, observers are not agreed as to the signification of these lines; the first upright one is generally supposed to be due to the sudden jerking up of the lever when the heart beats, and it is called the percussion wave or stroke; then the curve which follows corresponds to the expansion of the vessel when the blood

distends it, and is called the tidal wave; this upright stroke and curve are felt as one by the finger, and are not separable; included in the pulse also, and occasionally separable, is another lesser expansion, which is shown by the second curve. It is still a question how this latter one is produced; it is believed that when it occurs the systole of the heart is over, and the aortic valves closed, and so this second curve is a kind of reaction or recoil after the blood has been sent on to be delivered to the smaller vessels and capillaries. When the vessel has lost its elasticity, and in some cases, as Dr. Barlow used to teach, when there was any impediment to the circulation in front, this second wave becomes appreciable to the finger, and we have a double pulse, or as it is called a dichrotous pulse. The sphygmograph shows that dichrotism is a normal condition, although inappreciable to the finger.

You will remark that the first upright stroke being merely a percussion stroke, has little to do with the strength of the pulse; this is really indicated by the tidal wave which follows, and the amount of force which can be used to affect the wave is, to a certain extent, the measure of the tension of the vessel. I ought to say that the second or dichrotic wave has been regarded by some as corresponding to the contraction of the aorta; the first or tidal wave they have thought to be due to the systole of the heart, and the second wave to the systole of the aorta; but as before said, the right interpretation is not yet agreed upon by all. In the well-marked dichrotic tracing, the first curve is almost wanting, the vessel is so weak that it gives way immediately under the pressure of the instrument after the first shock of blood, and then the second rebound produces a double pulse, felt by the finger. The instrument has been very useful in showing the various amounts of tension in the blood vessels, and in the case of ansurism of the aorta, has indicated a marked peculiarity in this respect on the radial pulse.

There are many other points to be noticed about the pulse, did time admit of their illustration, as for example, what the French call "recurrence palmaire," or the rapidity with which blood returns to the distal end of the radial artery through the superficial palmar, after its complete compression by the finger.

CREMATION.

The subject of Cremation has been brought so prominently before the public of late, by articles, by letters, and by accounts of the few instances in which it has recently been performed, that the important subject of the disposal of the dead forces itself upon our consideration. According to Sir Thomas Browne, whose work, "Hydrotaphia; or, a Discourse on Sepulchral Urns" was published in 1638, the practice of burning is not so ancient as the burial of the dead. Tradition asserts that Adam was buried either on or near Mount Calvary. We know from scriptural records that Abraham and the rest of the patriarchs were also buried, and amongst the Jews and some other nations it was considered a great misfortune if a man were not buried in the "sepulchre of his fathers." It was also customary to bring home the remains of those who died afar from home that their bones might lie with those of their ancestors. It has been remarked that the rites of sepulture are not confined to man, as there is an approach to the practice amongst elephants, cranes, and bees. "The latter civil society," says Sir Thomas, "at least carry out their dead and hath exequies if not interments" The bones of beasts of prey are rarely met with on open plains, but are found in large numbers in caves and crevices of rocks.

Inhumation must certainly be considered the more ancient custom, as it is the one most generally practised in civilised communities. Cremation probably originated in the far East, and may be attributed to those philosophers who conceived that fire was the master principle in our bodies. They caused funeral piles to be heaped that man might be wafted more speedily to his native element. The Brahmins had always taught that the noblest end for man is to be burned alive. As many Eastern nations disposed of their dead by fire, the custom was no doubt carried into Europe by those tribes which originally peopled the shores of the Mediterranean Sea. It was continued by their descendants, hence we find cremation prevailed in Greece and Italy, and was spread by colonists from those countries into Gaul, Britain, Germany, Denmark, Sweden, and Norway. Throughout these regions it was general until abolished by the advent of Christianity. In the works of both there is frequent mention of the burning of bodies; and the depositing of ashes in urns. There is also evidence that the custom was preferred because it removed the possibility of inhuman treatment of the remains after death. The body of Hector, we read, was burned before the gates of Troy. With the Romans burning and burial appears to have been co-existant. Remus was "solemnly buried," and Numa, by a special clause in his will, was not burned but buried. The Consul Manlius, on the other hand, burned the body of his son according, probably, to the more general custom. The prejudices of the general public would probably militate against the introduction of the crematory process into England. As Christianity was the means of suppressing the custom, religious views would also interfere with its adoption. The operation, too, has proved very costly; but this has arisen from the whole of the necessary materials being required for solitary instances, and would be remedied by the general use of the same appliances. From a sanitary point of view the superiority of cremation over burial is markedly manifest. Science has taught us that the crowded churchyards of our towns and cities has been a fertile source of disease. The present system of removing cemetries and necropoles to a distance from human habitation greatly prevents the miasma arising from graves from penetrating into the haunts of man; but already many of these dwellings of the dead are becoming surrounded by habitations. When we consider the health of the people, it would seem desirable that cremation might be adopted. One difficulty remains which must weigh against its legalization. At present, if rumours become rife of foul play, after the death of any person in whom relatives or others are pecuniarily interested, by exhumation we can generally prove or disprove the reports. After cremation, a murderer would be safe, knowing himself secure from the law. No evidence of treacherous stab or subtle poison could be traced in the handful of ashes that would remain. The facilities of secret poisoning and some of the various forms of infanticide would be enormously increased. If Austrians and Americans are willing to introduce this method into their countries, we should require some efficacious safeguard against murder before accepting the advantages of cremation in England.

CORRESPONDENCE

—o—

We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—With your permission I will continue the remarks begun in a former letter.

The First College Examination takes place, as every student ought to know, after two winters' dissection, and consists of a paper of Six Questions and a twenty minutes' *viva voce* on Anatomy and Physiology. Thus, as in every test consisting of written and oral examinations we must prepare for it by the help of book work and of practical work.

Now the book work, although dry in details and uninteresting at the beginning, is generally more to the liking of the young student than is the practical work, inasmuch as the practical part of the course entails a good deal of hard and, at the same time, *disagreeable* work, unless the student has been born with a taste for dissecting. Consequently, many students do not, or prefer not to, understand the importance of this part of the course, and shuffle over their work in a desultory and inattentive manner, thinking that they will be able to make up their deficiencies by reading up the book work afterwards.

Now, I am sure, Mr. Editor, that you will agree with me that too great importance cannot be attributed to this very practical work, and that your experience will verify my proposition, that no man can hope either to be a good physician or surgeon unless he has *thoroughly* done his dissecting.

For it is but reasonable to suppose that the dissecting a part (if properly done) gives an impression to the mind of the dissector with regard to the relations and importance of the structures contained in that part, which no amount of reading a book or looking at a picture can give. However well the pictures of dissections are executed, they cannot give such impressions to the students as the *sight* and *touch* of the dead subject itself.

Perhaps, Mr. Editor, you will think I am stating facts which are too obvious to need commenting on, but I believe that you will admit that students lately entered at the hospital cannot possess your experience, and it is for them that these remarks are intended. It is very praiseworthy for a student to wish to attain eminence in his profession, but he must remember that it is not the mere facility of handling a knife that makes the surgeon—it is that intimate knowledge of the structures of the body that enables him to see them, as if in a transparent envelope, and the more this mental vision guides the manual dexterity of the operator, so much the more is he entitled to be called an able surgeon.

Now if these remarks be true, as I conscientiously believe for the *Surgical* part of the profession—they surely equally apply to the Medical branch. From external signs the *physician* has to deduce internal disorders and assign the causes of them before he can employ his knowledge of drugs for their cure. One, then, who had merely a superficial acquaintance with Anatomy might as well attempt to cure a patient—as a workman ignorant of machinery, attempt to repair a broken down locomotive. It is this knowledge of the *machinery* of the body which Physicians and Surgeons must so thoroughly possess that the *practical* study of Anatomy alone can give.

No student can hope to pass his First College on book work alone, because no book work will stand the test of a twenty minutes' *viva voce*. The Examiners at the *viva* require the students to point out and handle the parts himself. Now a man may know all about an artery or a nerve *theoretically*, and be unable to pick up either the one or the other at a minute's notice, and this is what I feel cannot be too strongly impressed on those students who intend to be examined for the First College in 1875—that a grain of *practical* knowledge is worth a pound of *book* work.

I do not wish to undervalue book work—far from it—but it is much less useful in my opinion than practical work for a student under examination. I believe that book work helps a man very much afterwards when he has thoroughly done his dissections, by calling up mental pictures which are familiar to him, and the Science of Physiology can hardly be learnt without a book. But on commencing to study Anatomy the case, I believe, is far otherwise, and further I think that were men allowed to dissect injected parts in their first year, taking longer time over each part, and were compelled to have a thorough *viva voce* examination in each part as it was finished, and if in addition no student were allowed *to begin another part unless he had satisfactorily answered the Demonstrator's questions on the one he* HAD *finished*, no school in London would be able to compete with Guy's men as far as Anatomy was concerned.

It would not be difficult to draw up a few practical rules for the dissecting-room of the nature above indicated, which would certainly simplify the demonstrators' work.

In my next I will offer a few remarks on Physiology, with your permission.

Your obedient servant,

AGATHOS.

MEDICAL WARDS.

—o—

New cases admitted from June 4 to June 10.

MIRIAM (Clinical)

Cot—Croup—Tracheotomy—Death

JOB.

3—Laryngitis
7—Laudanum Poisoning

PETERSHAM

3—Ulcer of Stomach (?)
9—Albuminuria
12—Acute Rheumatism
13—Enlarged Spleen
18—Septæmia
20—Acute Rheumatism
22—Morbus Cordis
23—Rheumatism
26—Enlarged Liver

PHILIP

6—Acute Rheumatism
7—Aneurism (?)
10—Paralysis
12—Dyspepsia
16—Glosso-laryngeal Paralysis
18—Albuminuria
19—Morbus Cordis
22—Bronchitis
23—Acute Rheumatism
25—Dyspepsia
27—Carcinoma of Stomach
30—Phthisis
32—Lead Colic
33—Acute Rheumatism
39—Lead
42—Pleurisy
43—Muco-enteritis
45—Lead Paralysis
47—Dysentery
48—Phthisis

ADDISON

6—Bronchitis
8—Morbus Cordis
13—Paralysis
15—Eczema
16—Locomotor Ataxy
30—Phthisis
34—Tubercular Ulceration of Intestine
35—Insolation (?)

STEPHEN

17—Phthisis
19—Nephritis—Acute
22—Morbus Cordis
49—Phthisis—Tubercular Ulceration (?)

MARY

3—Eczema Rubrum
5—Acites—Ovariaa (?)
16—Bullous Eruption

SURGICAL WARDS.

—o—

New cases admitted from June 11 to June 17.

ACCIDENT.

1—Fractured Femur—Injury to Abdomen
3—Crushed Thigh—Amputation—Railway Injury
18—Injury to Face—Fractured Clavicle—Run over
19—Injury to Spine
27—Fractured Femur

CORNELIUS

No Admissions

LYDIA

3—Cancer of Breast
5—Abscess on Chest
6—Abscess on Thigh
26—Diseased Hip

MARTHA

1—Diseased Sacro-iliac Synchondrosis
2—Femoral Hernia—Operation
3—Umbilical Hernia—Operation
6—Scirrhus of Breast
7—Femoral Hernia—Reduced
8—Epithelioma of Vulva
14—Epithelioma of Face—Operation
15—Bronchocele
16½-Abscess of Calf
17—Epulis
20—Sloughing Gumma on Arm
23—Fractured Femur

NAAMAN

9—Ulcer on Leg
11—Diseased Elbow-joint
15—Ununited Fracture of Radius
22—Dead Bone in Stump after Amputation through the Thigh

LAZARUS

5—Fractured Ribs and Emphysema
6—Stricture
7—Deep Abscess of Neck
9—Periostitis of Fibula
11—Stricture
15—Stricture
16—Caries of Os Calcis
17—Contraction of Cicatrix after Burn
20—Injury to Cervical Spine
21—Ulcer on Leg
22—Perinæal Abscess

JOB

15—Spasmodic Stricture—Ostitis of Tibia
16—Stricture

LUKE

2—Disease of Hip
7—Abscess on Back

DORCAS.

5—Diseased Knee
19—Talipes Equinus

CHARITY.

No Admissions

THE BIBLE CLASS.

The Bible Class will meet for the study of God's Word, with prayer, on Wednesday next, the 26th inst., at 6.30 p.m., at Hibernia Chambers, London Bridge. All Guy's students are invited to attend. Subject—Prov. iii. 1-21.

CRICKET CLUB.

GUY'S v. CHARLTON PARK.

Played at Charlton Park, on June 4th, 1874.

Charlton Park.

B. Craig, l b w, b Wallis	47
F. Dalgetty, b Reader	33
G. McCanlis, b Wallis	1
A. Burnett, c Steele, b Wallis	33
W. Gray, c Wallis, b Reader	0
R. E. G. Mathews, b Kendall	8
P. Gray, b Kendall	0
E. N. Cubitt, c Lewis, b Reader	11
A. Sales, c Lewis, b Wallis	1
Captain Robertson, s Lewis, b Reader	5
C. Shervington, not out	0
Byes 6, l b 2, w 5	13
	152

Guy's

H. Williams, b Craig	0	c Sales, b P. Gray	11
J. Reader, b McCanlis	3	not out	9
J. Boughton, s Sales, b Craig	10	c Shervington, b W. Gray	24
I. A. Lewis, s Sales, b Craig	0		
P. E. Wallis, b Graig	2	c and b W. Gray	0
R. Steele, s Sales, b Craig	21	b P. Gray	0
A. C. Keudall, not out	9	b Burnett	6
H. Liddell, b McCanlis	10	c W. Gray, b P. Gray	1
J. H, Poland, b McCanlis	0	not out	1
W. S. Jones, b McCanlis	0		
Leg byes 2	2	Leg byes	2
	57		54

GUY'S v. YALDING.

Played at Yalding on June 8th.

Yalding.

1st innings.		2nd innings.	
A. S. White, by Wallis	16	l b w b Wyatt	3
Parris, c Wyatt, b Gray	3	not out	2
Dr. Owen, e and b Power	0	run out	2
H. Fryer c Power, b Wallis	15	c Wyatt, b Wallis	7
J. Hodge, c Scudamore, b Power	10	b Wyatt	2
D. Irvine, b Power	0	b Wallis	4
R. Norton, b Power	0	b Wallis	0
T. Spencer, not out	21	b Wyatt	8
E. Holding, c Scudamore, b Power	0	b Wyatt	0
S. Day, c Wyatt, b Power	4	b Wallis	0
B. Holding, c Holding, b Wallis	8	c Power, b Wallis	5
Byes 6, l byes 4	10	L bye	1
	87		34

1st Innings.	Guy's	2nd Innings.	
S. A. Lewis, b Fryer	14	c Owen	4
H. Williams, b Fryer	13	c Irvine	0
W. Gray, run out	4	not out	19
W. Wyatt, c E. Holding, b Owen	1	c b w	8
G. Power, c and b Fryer	9	c Day, b Fryer	2
P. Wallis, b Fryer	14	b Fryer	3
E Bonsor, b Owen	0		
E. Steel, b Fryer	3		
H. W. Phillips, b Fryer	1	not out	4
Scudmore, b Fryer	3		
F. Holding, not out	3		
Byes 4, leg byes 1, wides 2	7	Byes 5, leg byes 3	8
	72		54

Matches have also been played with Blackheath Morden (1st and 2nd Elevens), the scores of which are left over till next week.

UNITED HOSPITVL ATHLETIC SPORTS.

At a committee meeting held on June 19th, in the House-Surgeon's room, the following gentlemen were elected to represent Guy's in the forthcoming sports :—

100 Yards—Messrs. Gibson, McClean, Harrison, Reader, Tyson, and Gray

1 Mile—Messrs. J. H. Poland, Maltby, and Bain.

Hurdles—Messrs. Reader and Gibson.

High Jump—Messrs. Reader and Collins.

Putting the Shot—Messrs. Vinter and Gray.

Wide Jump—Mr. Vinter.

Throwing the Hammer—Messrs. Vinter and Gray.

250 Yards—Messrs. Tyson, Harrison, McClean, Gibson.

2 Miles—Messrs. Maltby and Gray.

Half Mile—Messrs. J. H, Poland and Tyson.

Quarter Mile—Mr. Tyson.

GUY'S HOSPITAL ATHLETIC CLUB.

We regret to learu that there will be no Guy's Hospital Sports this year, owing to the fact that only 13 competitors have entered their names for 10 events.

It certainly seems to us astonishing, to say the least of the matter, that out of 400 students a sufficient number of entries cannot be obtained to hold our own sports.

We trust that the gentlemen who have the direction of the Athletic Club affairs will investigate the cause of such a want of heartiness and co-opcration amongst the students. If this state of things continues we can never hope to win the challenge shield again.

HOSPITAL SUNDAY.

The collections at the principal Protestant places of worship in the metropolis amounted to £5,000.

The Draper's Company gave £105.

A pastoral letter from Dr. Manning was read in all the Roman Catholic Churches last Sunday, appointing to-morrow as the day of collection for the Hospital Fund.

COMMUNICATIONS RECEIVED.

Mr. W. H. Jalland, Dr. Cook, Dr. Kingsford, Mr. John M. Edwards.

Dr. Pye-Smith's lecture is held over till our next issue.

We beg to inform "A Student" that besides omitting to send his name, he also omitted to stamp his communication, which came by post.

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A number of Subscriptions for back copies of the GAZETTE are still owing. Gentlemen will oblige by paying the same to either of the Editors, Post Office Orders being made payable at the Borough Post Office; or by HALFPENNY Postage Stamps.

In earnest desire to increase the value of our GAZETTE it has been resolved that the Editorship should no longer rest in the hands of one person, but that the duties and responsibilities, which of late have considerablly increased, shonld be shared by a small staff of Students, each engaged in different stages of their curriculm. The gentlemen who have consented to give their time and attention to this are:—

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Mr. A. Piggot.
Mr. A. M. Turner.
Mr. I. H. Poland.

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PHYSIOLOGICALLY AND THERAPEUTICALLY CONSIDERED.

By F. W. PAVY, M.D., F.R.S.,

Physician to, and Lecturer on Physiology at, Guy's Hospital.

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Guy's Hospital Gazette.

VOL. IV.—NO. 12. SATURDAY, JUNE 27, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

WE observe in the last issue of the *Students' Journal* "Peripateticus" has been "hitting up" Guy's men in reference to Athletics. It is not long since we published an article on that subject to our fellow-students, and we are sorry that so little effect has resulted from our advice on that matter. "Peripateticus" says "it may be due to increased attention to their medical studies, but, from whatever cause, I think it is to be regretted that the students of Guy's Hospital are unusually apathetic in regard to athletics; indeed, I hear that so few competitors entered their names for the various events that it has been decided not to hold any local sports this year. Of course Guy's will be represented at the United Hospital Sports, but it is very unlikely that its representatives will be in such force as on former occasions. Bart's. is very strong this year, and it is expected that this hospital will again carry off the challenge shield." We are really very sorry indeed to see the want of *esprit de corps* there is in the hospital, and the listless manner in which our men are treating everything; there really seems to be an entire stagnation in all affairs not, strictly speaking, connected with the usual routine of study. It is only recently that the hon.sec. of the Cricket Club was obliged to ask us to publish a letter which was certainly as strong an index as could be of the present state of feeling amongst men. One must agree thoroughly with "Peripateticus" in saying that it is to be regretted, for it seems almost beyond belief that out of the large number of students we should be unable to have any local sports or float a boat club. It is only through the greatest exertion of a *few* that the Cricket Club can be found with funds necessary for its continuance. We are extremely puzzled to find any cause for this state of affairs. Perhaps we might with much truth divide students of the present day into two classes—workers and non-workers, and there is unfortunately just now at our hospital no intermediate grade: men are either wrapped up body and soul in their work and have not any care or thought for anything beyond books and appointments, or they are idlers in the extreme sense of the word and spend their money and their time alike as careless of their future welfare as they are of their present condition and employments. There are very few men of an intermediate grade—men who can work at their professional studies with a will, and turn about and take their part in out-door amusements with equal vigour, although the best men living are in many instances men who in their early days were not remarkable for that close closeting study, which excommunicates a man from anything beyond books and bedside; on the contrary, men who have from time to time during their studentship proved themselves athletes in sports have also in their riper season proved themselves greater athletes (if we may use the expression) in their profession and have attained the greatest excellence.

The trial at Lillie Bridge will to-day decide whether or not there is still any of the old spirit left in Guy's; may we hope to see the shield fall to Guy's? if we should it will be an event as superlatively agreeable to all as it would be surprising to us.

LECTURES ON MEDICINE.

—o—

By DR. WILKS.

(Continued from page 83.)

DISEASES OF THE HEART.

Symptoms.—I have already said that when mechanism of the heart is interfered with from imperfection of the valves,

the impediment to the circulation will, in time, give rise to engorgements of the organs, with consequent symptoms, but that it is rather the weakened condition of the cavities and muscular structure dependent upon these valvular derangements which produce the more marked disturbance which brings the patient under our notice. It follows from this, that if this weakened state of the heart should be the primary charge, we have before us the worst form of cardiac disease. We have, therefore, two classes of symptoms and two conditions to deal with—the effects of the obstructed circulation and the weakened heart. Now, if the first has culminated in dropsy, we have remedies which, acting on the secreting organs, will relieve the loaded blood-vessels. We also have remedies which will regulate the action of the heart and increase its vigour, even before these symptoms occur.

Now, as regards the symptoms, one of the first and most important is breathlessness or *cardiac apnœa* which, as I have before described, is due to a want of relation between the heart and the lungs; the patient takes in sufficient air, but the blood is not pumped through the lungs with regularity, so that though he can fill his chest well with air, he breathes frequently and irregularly or stops for a moment before he begins to breathe again. These symptoms are quite sufficient to denote a weak heart, even if there be no bruit or derangement of rhythm.

Palpitation means that the patient is conscious of an irregular or violent action of the heart. This is due to some error in the innervation, and may be associated with a structurally healthy organ or a diseased one. In the latter case it is rarely remarked in aortic disease with enlargement of the heart, but is more usually associated with mitral disease and some ventricular dilatation; it is, however, by no means a necessary attendant on heart disease, and, as a rule, it is rather the breathlessness or dropsy which attracts the patient's attention than palpitation. It may be safely asserted that this is more commonly a symptom attendant upon a healthy heart than a diseased one, and that when a patient applies to a medical man for palpitation, the chances are largely in favour of his having no organic disease. The patient is usually nervous, suffers from dyspepsia, and may be leading a life calculated to render his nervous system irritable, to say nothing of his making use of articles like tea and tobacco, which may exert a direct influence on the heart. Although it is true that palpitation is a symptom of dyspepsia and flatulence, yet it is equally true that these latter symptoms are often troublesome concomitants of heart disease. The sufferer complains more especially upon lying down at night of the constant eructation of gas from the stomach, and thus it is that the symptoms of heart disease are not unfrequently attributed to stomach or liver. The fact is interesting from the circumstance of the heart and stomach being supplied by the same nerve, the pneumogastric, and that when one organ is affected the other participates in the disturbance. An analogous symptom is a dry, short cough, which is much of the same nature as is observed in gastric affections. Perhaps the most distressing symptom of all is the sleepless night so often met with in heart disease; as soon as the patient falls off to sleep, he starts up in fear of suffocation, and when awake is longing again for repose; in the day he waits for the night and in the night watches for the day. I have often heard patients express themselves in the words of Job, "When I say my bed shall comfort me, and my couch shall ease my complaints, then am I scared with dreams; so that when I lie down I say when shall I arise and the night be gone for I am full of tossings to and fro unto the dawning of the day." These words are far more applicable to a case of heart disease than to one of rupia and periostitis as has been suggested.

All these symptoms have reference to the weak heart, but after a time the impaired circulation shows itself in engorgements of the viscera and verous system. The lungs are congested and increased difficulty of breathing may ensue, unless hæmoptysis occurs, when relief often is obtained. You will often find that after hæmorrhge from the lungs, the symptoms are alleviated, and, therefore, you must by no means necessarily wish to arrest the bleeding. In the same way the bronchial tubes become intensely congested, and a quantity of secretion is poured out from them, which also affords relief. You must not therefore say that because the patient is expectorating a quantity of mucus that he has a complication of bronchitis and attempt to arrest it. You find, on examining the abdomen that some fluid may be present, and that the liver is considerably increased in size. This engorgement leads to some biliary obstruction, and the upper part of the patient's body may be observed to be slightly jaundiced. The legs are also œdematous The urine is scanty and full of solid matter, being, therefore, of high specific gravity. After a time it may be found albuminous, and, perhaps, even some casts be detected; for just as in the bronchial tubes, the congestion will lead to inflammatory secretion, so in the kidneys, the congestion may pass on to an actual nephritis. This very much aggravates the symptoms, for not only does the kidney now fail to carry off the superfluous matter, but causes an aggravation of the dropsy; and, whereas, in the first place, the anasarca occupied only the lower part of the body, we find now the arms and back of the hands becoming œdematous.

Now, as regards remedies, these are of two kinds; those which act directly on the heart to give it tone, and those which relieve the body of the consequences of the obstruction in the circulation. Amongst the first we have the most remarkable remedy in the Pharmacopœia; I say this advisedly, because I know of no other medicine which we can hold in our hands, and give to a patient who is daily approaching his end, and at once snatch him from the jaws of death. A man may be sitting in his chair gasping for breath, and overwhelmed with the fluids of his blood collecting in all parts of his body. You may give him digitalis, his heart be at once steadied, and with this effect the dropsy and other symptoms quickly depart, and before long you may actually meet him out of doors and engaged in his business. I know of several cases of this kind. Digitalis gives tone to the heart, as we know by clinical experience, as well as by observation on animals. If the chest of an animal be exposed, and digitalis administered, the organ is seen to contract more firmly, until becoming tighter and tighter, and its action slower and slower, it ceases to beat in the most complete form of systole. If the animal be previously poisoned by any substance which should relax the heart and stop its action during the time of dilatation, the effect of digitalis is even then still more striking, the drug excites it to contraction afresh, which goes on increasing in vigour until it ceases in systolo as before. Now, if in disease we have exactly the counterpart of a heart in this weak state, we have also the same valuable agent at hand. Should a patient have a very irregular and weak action of the heart, digitalis is the appropriate medicine; and since this irregular action is usually a concomitant of a dilated ventricle and diseased mitral valve, it is more especially in

cases where you have a systolic mitral bruit and irregular heart that you give digitalis. I could occupy you a long time in giving you illustrations of the remarkable powers of this drug. I have seen a woman pulseless with fluttering heart restored to life by its use and the withdrawal of alcoholic stimulants, and in cases where the condition of the heart above-named has been accompanied by dropsy, the latter has subsided as the organ has regained its tone. When the patient simply has this troublesome affection of the heart without further symptoms, I order ten drops of the tincture three times a day for a few days, and watch its action. If I was not seeing the patient for some time, I might order half the dose.

Another tonic for a weak heart is iron, and I therefore often combine the two remedies, digitalis and iron. Many persons have had their lives prolonged for years by the use of these two remedies. When the digitalis has been given sufficiently long to produce the required result, you may give the iron alone. Or you may join ammonia with iron. A simpler medicine is ammonia, with a bitter like senega, and with these we often combine henbane, on the supposition that it has a quieting influence on the heart. You will see from these observations that digitalis can have little effect in the case of the quiet and regular acting heart, such as is met with in aortic disease, and as a clinical fact, we find this medicine of much less value in these cases. Digitalis is a diuretic, and is therefore useful in all cases where there is dropsy. Here we wish to act on the secreting organs to free the body from the dropsical fluids and for this purpose there has been for many years past a pill in almost universal use composed of squill, digitalis, and mercury—as for example, a grain of each of these (using the pill hydrarg.) three times a day. The effect is not only to quiet the heart, but to increase the action of the kidney and liver, and so relieve the patient of the fluid. At the same time a purge is of eminent service, and patients often express themselves more relieved by a jalap powder two or three times a day than by any other remedy. You know that we have been using of late the resin of copaiba also as a valuable diuretic medicine: for sleepless nights we are obliged to give opiates as a quarter of a grain of mophia with ether as a draught, and find the remedy highly beneficial. When all medicines fail and the obstruction to the circulation is very great, we are forced to prick the legs, so as to allow the fluid to drain away; as it will not pass round in the course of the circulation, the only resource we have is to let it off. The practice is not unfrequently followed by dangerous erysipelatous inflammation, but at the same the patient's life may be prolonged for weeks or months by its judicious use.

PHYSIOLOGY OF MOTION AND SENSATION

BY DR. PYE-SMITH.

—o—

LECTURE XII.

In the last lecture we considered the functions of the eye as an optical instrument. We saw how it admits light to fall on the whole of the retina, and objects to produce their exact image on its centre (the *fovea centralis* of the yellow spot). We now come to the more difficult question of how and when the physical phenomena of light are transmuted into the physiological phenomena of vision.

The almost complete absence of the inner layers of the retina from the fovea seems to show that none of them contain the direct and special organs of vision. On the other hand the bacillary or columnar layer (Jacob's membrane) is here thickest and its cones most closely set, while towards the periphery of the retina, where sight is least exact, we have seen that this layer is less developed. We have, then, every reason to believe that the rods and cones are the essential end-organs of sight. The inner layers of the retina are transparent and allow undulations of ether to pass through them until they touch these structures. There each ray of light is transmuted into a correlated nervous impression; this travels down one of the fibres of Mueller to a ganglion cell, and is thence transmitted by one of the axis-cylinders which form the innermost layer to the papilla, and so to the brain; there the physiological sensation becomes a psychogical perception. If the rods and bulbs are the essential part of the retina, we should expect the papilla (where they are absent) to differ physiologically from the rest of the retina: and we find this to be the fact, for the place in the field of vision which corresponds with the optic nerve in the retina has been known since its discovery by Marriotte in the seventeenth century, as "the blind spot." It will of course be somewhat outside the centre of the field of each eye, about three inches when the object is held at arm's length. (Experiment described.) Again, the ascertained least distance between two luminous points which the eye is capable of discriminating corresponds with the diameter of the long, slender cones of the fovea: if the two points are brought nearer, the rays from both fall on the same cone and only one sensation is conveyed to the brain. Lastly, by throwing a strong light through the eye it is possible to see the vessels of one's own retina, and that must be by the layer *behind* them (experiment described): and to make the proof still more exact, the late Heinrich Mueller ascertained that the range of these "figures of Purkinje" in the field of vision corresponds to the actual distance between the vessels and the bacillary layer.

The functions of the nuclei and ganglion-cells which interpose between each rod or bulb and the optic nerve has not been even guessed. We may, however, compare the latter to the ganglia on the posterior roots of the spinal nerves, which lie between the end-organs and the centres of the sense of touch.

The first and simplest physical property of light to be perceived is *intensity* or amount. Notice that this does not always produce a proportional sensation. A very bright light paralyses sensation, and so is followed by a temporary blindness: and even a less degree fatigues the organs of vision, and thus produces a weaker sensation after a time than at first. Again contrast makes a feeble light seem bright if it follows on darkness and dark if it follows on full sunshine.

Secondly, light has the property of *colour*. A single ray of white light consists of a multitude of rays of different wave lengths and when only some of these are transmitted by a transparent or reflected by an opaque object they produce the sensation of colour. The longest waves are incapable of exciting the rods and cones at all, though they are appreciated by the skin, and these are called the dark heat-rays: the shortest cannot excite sensations of either warmth or light, but they decompose nitrate of silver, and are called the dark and cold chemical rays. Of those which

do affect the retina, the longest produce the sensation we call red, the shortest violet, and the intermediate rays the thousand other colours of the rainbow. This qualitative difference of light may be combined with the quantitative of which I just spoke. Thus we have bright full blue when all the other rays are stopped and plenty of light is present, a brilliant light blue when white light mingles with it, a pale greyish blue when white light is present but in small amount, and a full dark blue when there is little illumination but all of the waves are of the same length.

It has been known, since Newton first decomposed a ray of light into its component colours, that all the hues we see may be reduced to three primary ones* and their combinations, but it long remained an insoluble mystery how the retina appreciated them. Dr. Young (the decipherer of the famous Rosetta stone in the British Museum, and for many years physician to St. George's) first suggested a theory which has been lately verified, at least in the case of certain reptiles. In these some of the rods of the bacillary layer have red tips, others yellow, and the rest are colourless. We may therefore suppose that by the same or some other physical difference certain elements of Jacob's membrane in our eyes are excited by only the longest luminous waves of ether, others by the intermediate ones, and others again by the shortest. When all three kinds are affected at once, we have the sensation of white light. The red rods must be absent near the ora serrata, for red cannot be recognised when it is on the outskirts of the field of vision. And in the remarkable condition of colour-blindness called Daltonism (after the founder of the Atomic Theory who was its subject) we must suppose that all the elements of the bacillary layer are equally affected by waves of ether of any length which can produce luminous impressions at all. The effects of *contrast* and of fatigue are just as well marked with the sensations of colour as with those of intensity of light. The former is a very familiar experience; for the latter we have only to look at a bright red object until the red cones are exhausted, then look at a white surface and it appears green, because its component red rays are no longer perceived.

The third property of light when brought to a focus on a screen is that of *locality* and *form*. The picture on the retina will affect its several rods and cones, and through them corresponding ganglion-cells in the brain. And we learn by experience to connect the sensations thus perceived with the different quarters of space, and with the sensations of shape which we gain from the sense of touch. The notion of locality will of course be much helped by the power we have of moving the eye-ball. But it is obvious that objects in the lower part of the field of vision must be projected on the upper part of the retina and *vice versa*, while the images of those to our right hand will be found on the left part of the retina. Why, then, it has been asked, do we not see objects inverted? The answer is that we do not see the retinal image at all as a physical object. All the retina furnishes us with is a series of *signs* which are by experience recognised as corresponding to physical objects; to these however they have no more likeness than words have to the things they signify.† The effect of the apparatus of the eye is to furnish us with a series of "local signs," the interpretation of which we have gradually to learn.

So far all we have considered applies to vision with a single eye. The fact of our having two, with two fields of vision and two sets of "local signs," introduces fresh problems. The effect of the two sensations derived from two slightly different fields, when combined by the brain into a single perception, is what we know as the perception of *solidity*. That is to say, a flat object throws an identical picture on each eye, a solid one throws a somewhat different one; and by experience we learn to associate this double sensation with objects which give to the senses of touch and muscular effort what we call solidity. I must not enter on the many interesting illustrations of the laws of binocular vision furnished by the stereoscope—solidity, distance, stereoscopic brilliance, rivalry of the retinæ, &c.—but must conclude the subject by noticing two other points in the physiology of sight.

The *duration* of a simple sensation of light. A momentary flash produces an impression which lasts an appreciable time. This is seen by whirling a spark round. The sensation produced is not that of a luminous point moving in a circle but of a continuous bright ring, for the spark has returned to its original position before the impression it then made has passed off.

Subjective vision.—I began by saying that the optic nerve can only convey a sensation of sight, that (to use Johannes Müller's expression) is its specific nervous energy. So that if it is excited by other means than light the result is still vision. If you press on the under side of the sclerotic with closed eyes, you will see a spectrum which will of course be referred to the opposite point, in the upper part of the field of vision. If the optic nerve is injured, the patient does not feel pain but sees a flash of light. The brain is only cognisant of an excitation of the optic nerve; whether that is produced as usual by light falling on its end-organ or by any other means, the result is the same. Any sensation of sight which does not depend on light reaching the retina is called a "subjective" sensation, and "illusions" are real sensations of this kind, which are liable to be misinterpreted as the signs of external objects, instead of being recognised as the result of mechanical or other irritation of the optic nerve, its end-organ, or its centre.

MEDICAL WARDS.

New cases admitted from June 11 to June 17.

JOHN (Clinical)

2—Morbus Cordis

14—Immersion—Bronchitis

15—Pneumonia

* Helmholtz of Berlin, Maxwell of Cambridge, and other natural philosophers still differ as to which colours should be called primary—red, blue and yellow, or red, green and violet.

† This Empirical Theory of Vision was implicitly taught by Dr. Jurin, a former physician to our own Hospital (1684-1750), and has since been fully elaborated by Lotze, but it is admirably expressed in the following passage from Bishop Berkeley: "That is to say we perceive Distance not immediately but by the Mediation of a Sign, which hath no likeness to it or necessary connection with it, but only suggests it from repeated experience, as words do things." (Alciphron 2nd. Ed. vol. i. p. 223.) He discusses the subject at length in "An Essay towards a New Theory of Vision" (1709). Sect. 88-102 "On Erect Vision."

MIRIAM (Clinical)

20—Peumo nia
27—Abdominal

MARY

2—Locomotor Ataxia
4—Obesity—Ascites
6—Subacute Rheumatism
12—Purpura
13—Morbus Brightii
20—Ovarian (?)
24—Subacute Rheumatism
52—Eczeyma

STEPHEN

20—Gout
25—Neuralgia
31—Paralysis Agitans
34—Morbus Cordis
50—Salivation

PETERSHAM

20—Morbus Cordis
26—Gastralgia

ADDISON

2—Enlarged Liver
6—Phthisis
9—Bronchitis
14—Acute Rheumatism
40—Phthisis

PHILIP

11—Acute Rheumatism
12—Phthisis
29—Acute Rheumatism
43—Subacute Rheumatism
44—Chronic Bronchitis
48—Phthisis

SURGICAL WARDS.

—o—

New cases admitted from June 18 to June 24.

CORNELIUS

1—Fractured Tibia
3—Lacerated Wound of Palm of Rig ht Hand
4—Dislocated Spine—Reduced
15—Injury to Spine
16—Fractured Tibia and Fibula

NAAMAN

4—Fistula in Ano
7—Loose Cartilage in Knee-joint
8—Recurrent Cancer in Glands of Neck
20—Excessive pain after old compound Fracture of Leg

ACCIDENT

No Admissions

LUKE

2—Suppurating Bursa Patellæ
3—Femoral Hernia
8—Internal Hæmorrhoids
13—Compound Fracture of Femur
15—Synovitis of both knee-joints
19—Epithelioma of Upper-lip

LAZARUS

9—Suppurating Bursa Patellæ

DORCAS.

11—Polypus

LYDIA

19—Diseased Hip
24—Cleft Palate

CHARITY.

2—Fractured Femur
6—Femoral Hernia—Operation
8—Deformed Leg
15—Fractured Tibia
20—Hard Bone in Stump
24—Lacerated Wound of Face—Run-over
25—Injured Femur

MARTHA

15—Chronic Eczema

JOB

2—Traumatic Synovitis of Left Knee
11—Varicose Veins
16—Stricture
20—Blow on Testicle
22—Caries of Tarsal Bones
25—Old Burn on Leg

CRICKET CLUB.

GUY'S v. BLACKHEATH MORDEN (2nd elevens),

Played at Blackheath, June 13th.

Guy's

R. Manser, run out	5
J. Reader, b A. Poland	12
O. Edwards, b Spencer	0
C. Collins, c Burgess, b A. Poland	21
H. Williams, c Spencer, b A. Poland	1
C. Bell, b Shaw	12
R. M. Harrison, c Rodwell, b Shaw	3
H. Liddell, b Green	8
J. H. Poland, b Shaw	1
E. Steele, b Green	1
W. Wyatt, not out	13
Byes 14, leg byes 7, wides 3	24
	101

Blackheath Morden.	
C. E. Green, c Poland, b Wyatt.....	0
R. Ingleden, c Collins, b Edwards....	5
W. R. Burgess, retired.....	19
J. E. Shaw, c and b Wyatt.....	3
E. Rodwell, run out.....	0
A. Poland, c and b Wyatt	15
H. R. Shaw, c Wyatt, b Reader	6
A. Finch, c Wyatt, b Reader	12
H. Spencer, b Wyatt.....	0
G. Pressy, b Reader.....	0
A. Pressy, not out	0
Bye 1. leg bye 1, wide 1	3
	63

GUY'S v. BLACKHEATH MORDEN (1st elevens).

Played at Blackheath, June 17.

1st Innings. Blackheath Morden.	
A. Poland, b J. Earle.....	1
J. McKern, b J. Earle.....	19
W. Burgess, run out	80
T. Batson, s W. Gray, b Wyatt	24
R. Brocklebank, run out.....	24
E. C. Fraser, run out	47
M. Pole, b J. Earle.....	0
E. Dent, run out	0
R. Ingleden, c R. Steel, b Gray.....	2
J. Peat, not out.....	0
G. Brocklebank, c Wyatt, b Earle....	0
Byes 2, Leg Byes 7, Wide 1	10
	207

1st Innings. Guy's		2nd Innings.	
P. Wallis, b McKern	0		
R. Holman, b Batson	6		
H. Williams, run out	0	not out.....	4
W. Gray, c Pole, b Batson	8	not out.....	7
J. Reader, c Batson	5		
W. Wyatt, c Burgess, b Batson	4		
R. Steele, b McKern	1		
J. Earle, not out	8		
R. Manser, c Peat, b Batson	0		
E. Steel, c Poland, b Batson	3		
O. Edwards, b Batson	0		
Byes 1	1	bys 4, lg-bye 1, wide 1	6
	36		17

CORRESPONDENCE.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Considering that Fives is the only means of exercise afforded to students without going some distance from the hospital either to play cricket or practice running and jumping at some of the grounds especially provided for the purpose, I think it would be a great benefit to the hospital students if the authorities would provide a Gymnasium. It need not be a large one, but fitted with horizontal and parallel bars, covered over by a roof without walls.

Or else improve the Fives Court, which at present is in a very bad state. The wall on the right-hand side being very low, without doubt gives rise to some very pretty play on the part of tall men, but gives considerable Inconvenience to short ones, when the balls go over. Also the line is about three or four inches too high, and the walls are very rough and broken. Now, if the walls were cemented over, and the side wall made higher, as well as the wall from Petersham House carried further out, it would be a considerable gain to those who desire exercise, without having the tennis to go some distance from the hospital to get it.

Hoping that you will find space to insert this,

I am Sir,

Yours obediently,

VERITAS.

GUY'S ATHLETIC CLUB.

The trial heats of the 100 yds. and 200 yds. flat races were run off on Thursday last, at the Star Grounds, Fulham, with the following results :—

100 yds.—Tyson, 1 ; McClean, 2 ; Gray, 3 ; Gibson, 4.

Tyson, who was quickest away, led throughout, and won by 2 yds. Gray being 1 yd. behind McClean and 2 yds. in front of Gibson. Time, 10⅘ sec.

250 yds.—Tyson. 1 ; McClean, 2 ; Gray, 3 ; Gibson, 4.

Tyson again got the best of the start and never being passed won easily by 4 yds. from McClean, who was 2 yds. in advance of Gray, Gibson being last by 3 yds. Time 29 secs.

Harrison afterwards ran against time, but failed to accomplish the distances so quickly as Tyson.

COMMUNICATIONS RECEIVED.

Dr. Albert Carter, Mr. Arthur G. Mickley, Mr. A. R. Manby, Mr. Charles Munden, Mr, Hugh R. Ker, Dr. Newton Greenwood, Mr. W. H. Jalland, Mr. J. C. Clarke, Mr. R. S. Tomlin, Dr. Booth, Mr. T. Wright Mason.

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Guy's Hospital Gazette.

VOL. IV.—NO. 13. SATURDAY, JULY 4, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

WE have heard with regret that our honoured Senior Consulting Surgeon has resigned the Presidency of the Physical Society. We are not in a position to relate the causes that led to Mr. COCK's resigning an office on which he conferred honour; whatever they may have been we sincerely trust that there is no truth in the rumour that has been pervading the hospital to the effect that Mr. COCK's resignation was due to a round robin circulated amongst, and signed by, a certain clique of students in the hospital. For the honour of Guy's we hope it is not so. But, as it is our duty to reflect faithfully the opinions of the students, we can but mention the prevalent rumour.

THE students who assemble in October will miss one or two familiar faces amongst the subordinate staff. We understand that Mr. RENDLE has resigned his demonstratorship, and has left us for some other work of usefulness. We are sure that all who knew him will wish him success in whatever work he undertakes, and will unite in testimony to his labours on behalf of his pupils and to his efforts for the well-being of the school.

Mr. STEIN, whose face has been familiar to Guy's men for the last eight years, leaves at the end of this month without a pension. As janitor, an office involving no slight degree of responsibility and tact, he has earned the esteem of all who knew him, and we understand that it is the intention of some of the students to present him with a substantial mark of their good-will. We trust that former students who read this article will contribute.

Mr. HAINSBY, more familiary known as "Jim," has also resigned, so that no longer shall we look to him for the "properties" of the dissecting room.

Who may be the new holders of the vacant offices we do not know as yet. We hope that they will be men well qualified for their posts, and will, when their turn comes to give way to others, leave behind them the remembrance that they did their work well and thoroughly. We bid them welcome as all must obey the irresistible law of change,—and, with the courtiers of past time, we say, "Le Roi est mort, vive le Roi."

We must, however, do the authorities justice in confessing that there was a great need of some changes in the hospital, and, no doubt, further changes are in contemplation; for however much we may admire the *willingness* of a man to do his office, we must not at the same time permit ourselves to be blinded by this admiration as to his *capability* for work.

PHYSIOLOGY OF MOTION AND SENSATION.

BY DR. PYE-SMITH.

—o—

LECTURE XIII.

The end-organ of the sense of HEARING is the Membranous Labyrinth, the afferent nerve is the portis mollis of the seventh, and the ganglion is a nodule of grey matter close to the middle groove of the medulla oblongata. The physical object of the sense is a sonorous undulation, in many respects comparable to that which affects the eye: but light is undulation of ether, sound is undulation of material particles, either solid, liquid or gaseous, and therefore cannot be transmitted through a vacuum.

There are three paths by which the waves of sound can reach the organ of hearing—(1) By the bones of the head to the osseous labyrinth and perilymph. This is the only way in the case of fishes which have no external ear, and also other animals (whales, seals, &c.,) when under water.

We can use it ourselves by putting a watch against the mastoid process, or on the top of the head; and when the outer or middle ear is obstructed or destroyed by disease without the labyrinth being affected, all sounds are heard by this channel. (2) By the air in the external meatus, the normal way. (3) When the Eustachian tube is open, it is possible for sonorous vibrations to reach the tympanum by this channel, through the mouth or nares.

The *auricle* is of great use in many animals, acting as an ear-trumpet. The angle of reflection is equal to that of incidence for the waves of sound as well as for those of light or for those of water, and you see by this diagram how they would be collected by the conical ear of a horse or a hare. Moreover, the power of moving the ears must give such animals a good notion of the direction of a sound. In man, the intrinsic muscles (which when developed adapt the shape of the ear to reflect a sonorous wave to the best advantage) are atrophied, the pinna is flattened, and only few individuals have the power of moving it. Moreover, its loss does not appear to impair hearing, so that we may regard it as an obsolete, functionless organ.

The vibrations of air which enter the meatus pass directly to the *membrana tympani*; or, as you see shown here, are reflected again and again from its walls, if they strike it at a large angle at first, until they reach the same surface. The membrane vibrates as a whole, in the way an actual drum-head does, and transmits its vibrations to the *ossicula auditus*. If they were absent, the air in the tympanum would transmit the sound, but much less perfectly. The bones themselves may transmit it in two ways, by swinging of the whole chain or by vibration of the particles of each in succession. In the same way, if you strike the end of a freely hanging beam with a hammer, you may simply disturb the particles, or you move the whole through space.

Actually the waves of sound are transmitted across the tympanum by the movement of each ossile as a whole. The handle of the malleus is pushed in, its head draws that of incus outwards,* and the two bones swinging on an axis between the pr. gracilis of the malleus and the pr. brevis of the incus, the long process of the latter tilts upwards and inwards, and so pushes the stirrup-bone against the perilymph on the other side of the *fenestra ovalis*.

The sonorous vibrations thus communicated to the internal ear are transmitted from the perilymph through the membranous labyrinth to the endolymph and so reach the end-organ of the auditory nerve. These in the *ampullæ* of the semicircular canals consist of long stiff bristles set upon the endothelium lining the cavity, the cells of which are probably directly continuous with the axes of the auditory nerve-fibres. In the *vestibule*, where these hairs are more scanty, there are a multitude of minute calcareous bodies called ear-dust (otoconia) which answer to these larger otolithes of fishes, and probably intensify the impulse of the waves of the endolymph.

A third division of the auditory nerve is distributed to the *cochlea*, and this part of the labyrinth is so complicated that I will describe its anatomy at length. You see in this model the position, relative size and shape of the bony cochlea. Those of you who are familiar with the snails' shell it resembles, will understand me when I say the cochlea would be described as univalve, spiral and conical, with a perforate columella (*modiolus cochleae*) and a somewhat depressed apex (*cupola*). The whorls of the right cochlea pass from apex to base the same way as the hands of a watch, like those of a dentral shell; those of the left cochlea wind the opposite way like a sinistral shell. The simplest form in which we find the cochlea is like the simplest form of a gasteropod shell, *e.g.* a limpet. It is a mere cone, slightly turned at the apex, as you see in this figure of an owl's ear. Imagine a triangular plate with the apex cut off placed in a limpet shell. This septum or lamina would divide it into two chambers which would communicate at the apex only. This is the case in the owl's cochlea. One chamber opens below into the tympanum and is called *scala tympani*, the other into the osseous labyrinth and is called *scala vestibuli*. The round aperture of the scala tympani (*foramen rotundum*) is closed by membrane, so that no air enters the cochlea from the middle ear. The *apertura* (scalae vestibuli) *cochleae* is unclosed, and through it perilymph is admitted from the vestibule of the osseous labyrinth to the scala vestibuli, and so through the small space at the apex of the cone unclosed by the septum (*helicotrema*) to the scala tympani. Now, the difference between an owl's cochlea and a man's is just that between the shell of a limpet and that of a snail. The cone is lengthened out and twisted spirally upon itself. Sometimes the coils do not touch, as in the shell of *Vermetus* and in this cochlea of a whale, and then no columella is formed. Sometimes there are fewer whorls than the two and a half of the human ear, sometimes more.

Thus, to take another comparison, this human cochlea is like a double spiral staircase (as you may see in the Chateau de Chambord) in which two passages, placed one above another, wind round a central pillar, getting smaller as they ascend, till they meet in the cupola at the top. You must, however, suppose that the stones which form the roof of one passage and the floor of the other, do not quite reach to the outer wall. This is the case with the *lamina spiralis* of the bony cochlea. In the fresh ear a vertical section through the cochlea shows that their deficiency is supplied by membrane, which is fixed along the free edge of the bony lamina, and stretches to the inner wall of the cochlea, thus completing the separation between the two scalae. This spiral membrane (*membrana basilaris*) is covered by a similar one (named after its describer Reissner), which is also attached to the lamina spiralis ossea internally, and to the wall of the cochlea externally, a little higher than the basilar membrane. So that a vertical section shows three canals winding round the columella, (1) the scala tympani below, closed at its broad end by the membrane of the fenestra rotunda, communicating at its narrow end with the scala vestibuli by the helicotrema; (2) the scala vestibuli, opening into the osseous vestibule its broad end, and with the scala tympani at its narrow one; (3) the much smaller *scala media* (also called *ductus cochlearis* and *canalis cochleae**) which lies above and outside the scala tympani, below and outside the scala vestibuli. This spiral canal is bounded outside by the bony wall of the cochlea, below by the basilar membrane, and above by that of Reissner. Its narrow end, in the cupola, is closed, its broad end, at the base of the cochlea, opens by a minute orfice (*canalis reuniens*) into the membranous vestibule (*sacculus*). Hence it is filled with

* Movement between the two is prevented by the interlocking of their articular surfaces, but if from extra pressure of air in the tympanum the membrane and malleus are pushed outwards, movement in the joint occurs, and thus the stapes cannot be dragged from its attachment. This mechanism (discovered by Helmholtz) is, in fact, just like the protective interlocking of the teeth of a "tippler's" watch-key.

* This term is sometimes confined to the part of the scala media immediately above the basilar membrane which is covered in by the *membrane tectoria*.

endolymph, and lies in the perilymph which fills the two larger scalae, just as the rest of the membranous labyrinth lies in the osseous one. It is on the floor of this third spiral passage, (on the upper surface of the membrana basilaris) that the rods of Corti are arranged. [Their form and connections shown by diagrams]. These rods or fibres of Corti then, with the adjacent bristle-cells, are the end-organs of the cochlea. They are set in motion by the vibration of the endolymph, like the bristles of the ampullae and the otoconia of the vestibule; and, having translated these sonorous vibrations into a nervous impulse, pass them on through the axis-cylinders of the cochlear nerve which runs through the lamina spiralis, to its main branches in the columilla, and so to the central ganglion in the medulla oblongata.

The course of sonorous undulation in the labyrinth is now clear. Each time that the foot-piece of the stapes is driven in, a wave of perilymph traverses the vestibule, passes up each semi-circular canal, and back again; up the scala vestibuli, through the helicotrema, and down again through the scala tympani to the membrane closing the fenestra rotunda, which it pushes into the tympanum, displacing a little air down the Eustachian tube. (If it were not for this arrangement it would be impossible to make a wave in the perilymph, for enclosed in a bony case it would be virtually incompressible.) The undulation, as it passes through the perilymph, is transmitted through the membranous labyrinth to the endolymph, and the vibrations of this fluid act on the end-organs of the three divisions of the auditory nerve (vestibular, ampullar, and cochlear).

MORBID IMPULSE.

At the monthly meeting of the Medico-Legal Society, recently held in New York, Professor A. Hammond read a paper on "Morbid Impulse." The paper consisted chiefly of a recital of cases of morbid impulse that had come under the observation of Professor Hammond, without any specially elaborate analysis of the disease. He laid down the proposition, however, that observers could never be sure that those afflicted with this tendency had exercised all their will-power in resisting it. In referring to the several cases that had come under his observation, Professor Hammond mentioned one instance of a young man who told him that he felt impelled by an irresistible power to kill his friend. He had even gone so far as to put some strychnine in a mug of ale which he had invited him to drink. However, as his friend was about to drink the ale he knocked it out of his hand as if by acciden . It not unfrequently happened, he said, that persons took pleasure in carrying out these impulses, and he instanced the case of one young man who told him that he knew he was doing wrong, but that it gave him p easure to do it. He mentioned another instance of a young man who was arrested for assaulting a lady in the street. His mode of procedure was to throw down the lady whom he might meet, take off her shoes, and run away with them, but he did not in any other way molest her. On searching this young man's trunk, it was found full of ladies' shoes. He had no use for them, but it gave him pleasure to take them. In 1864 a man killed, in the forest of Vincennes, two little boys, whom he had never seen before, and when confined in prison he said that he had no motive to kill the children. The case of Waltz, who had been lately executed, seemed to him to come within the same category. Undoubtedly, he said, habit had much to do with crime, which arose in the first instance from mere impulse, and in illustration of this theory he referred to several cases, among them that of the boy Pomeroy, who created a great deal of excitement about two years ago in Chelsea, near Boston. At that time great cruelties were perpetrated on children at Chelsea, in various ways. Pomeroy who was a boy of about fourteen years, was discovered to be the perpetrator of these cruelties, and he was convicted and sent to the House of Refuge. He was released on the 6th of February, and in the following April a little boy was found dead, with his head nearly severed, and with about 30 stabs in different parts of his body. Suspicion fell on the boy Pomeroy, and he was arrested. He was confronted with the body of the murdered child, and admitted his guilt. When asked what he thought should be done with him, he gave an answer which should commend itself to the attention of those having charge of such matters—"Put me somewhere where I cannot do such things." Professor Hammond mentioned another peculiar case of morbid impulse continued by habit. A young man, a member of a highly respectable family, had consulted him, and his case was this—He had been struck with the appearance of a lady who was walking before him through the street, with a very rich silk dress. Suddenly the impulse came upon him to ruin the dress with sulphuric acid, and accordingly he ran into a drug store purchased the acid, and without observation effected his purpose. He derived much pleasure from yielding to the impulse that he resolved to continue his course, and so he purchased more sulphuric acid and ruined a second dress. He then resolved to continue this pursuit, but a night's rest brought a better state of mind, and he was so sorry for what he had done that he actually wrote an advertisement and sent it to the newspapers, with the view of finding the ladies whose dresses he had destroyed, so that he might indemnify them. On his way to the newspaper office, however, he saw a handsome dress, the impulse at once seized him, and he yielded to it without hesitation. Thus, whenever he saw a handsome dress, he could not resist the impulse to destroy it with sulphuric acid. Professor Hammond advised him take a sea voyage in a vessel in which there was no woman passenger. He complied with his advice, went to sea in a fishing schooner, and returned perfectly cured. The desire of a person to throw himself from a great height on which he might be standing, and the morbid impulse stimulated by the presence of a suitable weapon to commit a deed of violence, were duly referred to. The yielding to a morbid impulse, through the influence of imitation, was fully illustrated. Among other cases, Professor Hammond mentioned that some years ago a man hanged himself in the Hotel des Invalides, Paris. No suicide had taken place there for three years, but in a short time afterwards five persons hanged themselves from the very same beam. As another instance, he said that when he was a medical student in the University of New York he had a companion student who used to dissect along with him. He was of cheerful disposition, and gave no evidence of morbid impulse. However, he was one morning found dead, having divided the femoral artery. It was quite an unusual mode of suicide; no other had probably ever occurred in the State of New York, but in a week afterwards there were two similar suicides. In the first case, they had suicide from suggestion, and afterwards from imitation. For this reason Professor

Hammond advocated a less public execution of criminals and slaughter of animals. Morbid impulses arising from the force of habit often continued a long time when the original cause had passed away. In illustration of this theory he stated the case of a young lady who had a disposition to throw every available article into the fire. In the first instance she burned an old slipper, and derived peculiar pleasure from the contortions through which the leather went in the process of burning. The next day the impulse was renewed, and, yielding to it, she burned a felt hat, but without any pleasure, inasmuch as the hat did not go through the same contortions as the slipper. The third day she burned a Prayer-book, and soon she burned shawls, bonnets, and every article of value within her reach. The peculiarity, however, was that she took no pleasure in seeing them burn, as in the first instance, and her impulse being satisfied on throwing them into the fire, she walked to another part of the room. She was, nevertheless, entirely cured by subjecting herself to such restraint as could be used in her own house. The dread of dishonour, shame, and ignominy, the speaker said, was frequently more potent than that of death to check morbid impulses, and on this point he instanced the fact that Napoleon had successfully checked a suicidal epidemic in the French army by appealing to this feeling. – *Standard.*

CRICKET CLUB.

GUY'S v. ST. BARTHOLOMEW'S.

1st Innings. Bartholomew's.		2nd Innings.	
J. M. Derington, b Earle	0	c Mitchell, b Earle	17
J. L. Poynder, b Mitchell	3	b Steele	1
M. H. H. Vernon, thrown out by Steele	6	b Earle	0
C. G. Hard, c Earle, b Mitchell	1	b Steele	0
F. H. Craddock, c and b Earle	3	b Earle	0
J. W. Roughton, c and b Earle	5	b Earle	15
P. Tarleton, not out	16	b Steele	1
W. N. Smith, c Collins, b Earle	4	b Earle	3
G. Parkinson, run out	0	b Steele	3
R. E. W. Brewer, run out	2	b Earle	0
A. W. Thring, c Manser, b Mitchell	0	not out	0
Byes 1, leg byes 1, wides 1	3	Byes 4, leg byes 3	7
	43		47

1st Innings. Guy's	
H. Williams b Tarleton	0
J. A. Lewis, b Tarleton	20
A. F. Wilson, b Tarleton	0
C. J. Mitchell, b Craddock	3
R. Steele, b Tarleton	41
W. Gray, run out	2
J. H. Earle, c Vernon, b Tarleton	0
R. Bonsor, not out	27
C. Collins, b Tarleton	1
R. Manser, b Tarleton	0
W. Cock, c Smith, b Tarleton	0
Byes 4, leg byes 2, wides 11, no ball 1	18
	112

Guy's won in one innings, with 22 runs to spare.

For Guy's, Earle bowled well, especially in the 2nd innings of Barts.

Tarleton's bowling analysis in the 1st innings of Guy's is worthy of record :—

	Balls	Runs	Maiden Overs	Wickets	Wides	No Balls
Tarleton :—	138	36	16	8	0	0

SURGICAL WARDS.

New cases admitted from June 25 to July 1.

ACCIDENT

6—Fractured Base
9—Incised Wound of Abdominal Wall
14—Fractured Base
16—Cut Throat
18—Incised Wound of Arm
21—Fractured Femur
23—Contused Hip
24—Crushed Toe and Contused Foot

CORNELIUS

19—Injury to Kidneys

LUKE

3—Thecal Abscess
8—Cystitis
10—Stricture of Urethra
13—Fractured Femur and Wound of Knee-joint
18—Diseased Bone of Tibia and Ulcers

CHARITY.

1—Cleft Palate—Old
14—Pott's Fracture—Old
16—Varicose Veins
20—Large Bursa over Patella

DORCAS.

6—Incarcerated Hernia Femoral
9—Fractured Femur and Bed Sores
12—Cleft Palate
13—Nævus over Right Eye

MARTHA

6—Abscess about Knee
7—Effusion into Knee
34 (Cot) Hip Disease

LYDIA

3—Varicose Ulcer
5—Large Bursa over Patella
9—Lipoma over Scapula
18—Fracture of Tibia and Fibula
24—Fractured Femur and Injury to Foot

NAAMAN

1—Old Disease of Knee
9—Disease of Finger

JOB.

5—Fracture of Inferior Maxilla
6—Irreducable Inguinal Hernia
8—Crushed Finger
9—Anal Abscess
16—Internal Hæmorrhoids

LAZARUS

No Admission

CORRESPONDENCE.

—o—

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—With your permission I will offer some remarks on the study of *Physiology*.

As the science deals with the functions of the constituent structures of the human body, Physiology is as important as Anatomy to the student. Two at least of the questions in the First College examination paper are set in this subject, so that a certain amount of proficiency is required in it. To attain this proficiency the authorities have arranged for three afternoon lectures a week during the winter sessions, and a class of Practical Physiology which lasts for three months in the second winter session of each student. I would ask you, Mr. Editor, if anything can be more absurd than the way in which the Lectures on Physiology are managed at Guy's. I do not of course refer to the professors, of whom we may well be proud, but to the hours of teaching. At 4.15 p.m. in the winter session students flock to the Anatomical Theatre to attend these lectures. I am sure that any impartial critic who has ever been present will agree with me that the greater part of the lecture is inaudible from the noise and foolery which obtain amougst the students, and that often the lecturers have been compelled to pause and, with that good humour that specially characterises them, beg their hearers to remember that if they are *Medical Students* they do not therefore necessarily cease to be *gentlemen*.

Add to this the feeling of disgust which many of the students experience on witnessing the experiments performed on live animals (experiments which only serve to illustrate known truths, and, as such, are superfluous) is so strong as to quite prevent their interest in the lecture *per se*.

I do not myself see how all the blame can be attached to the students for the riotous proceedings during the Physiology lectures, when it is understood that many of them have been waiting about the hospital since the morning without a lecture to attend, between 10 a.m and 4.15 p. m. For some no doubt the dissecting-room has its attractions and duties—for all the museums and library—but when the charm of novelty has worn off and the student makes friends, he is generally introduced to some of the many inducements to him to waste his time, and prefers to attend some select haunt of conviviality instead of working.

I will not dilate at present on these inducements, as I intend, with your permission, to make some observations on them in a future letter. Whatever these inducements may be they are in many cases, if not in all, accompanied by thirst which leads the student to practice freely the function of *deglutition*, which, however interesting as a physiological illustration produces results often too plainly visible at his entry into lecture.

Of course I shall be met by the objection that one cannot *make* young men steady workers by any system of rules framed for the purpose. With this proposition I cordially agree, but at the same time I must remind you, Mr. Editor, that the greatest genius who ever existed once said—

"The sight of means to do ill deeds, makes ill deeds done,"

and it follows that those who are virtually intrusted with the life-education of the young ought to make some arrangements so that their pupils shall be exposed as little as possible to temptation.

The Practical Physiology, or as it is popularly called, the "Microscope" Class, presses very heavily on the students, on account of each man being obliged to get a microscope for himself. Now, as these articles cost from £7 to £10, very few students can find the money for them without incurring personal inconvenience or worse still, running into debt. The medical student, as every one knows, is, with a few fortunate exceptions, an impecunious individual. He has to make a little go a long way, and to keep up a respectable appearance upon that little. The cost of every necessary has increased more than 50 per cent. in London during the last ten years, money has become cheaper, and as a natural consequence what money will buy has become dearer; add to this the anxiety of the motherly-females who attend to his wants and apartments, to make as much as they can out of their lodger, and then tell me, Mr. Editor, whether it is a graceful act on the part of the Institution which lives by the student, to put him to further expense, and to saddle him with an instrument which is of very little use in practice, as it is not powerful enough. Would it not be more becoming on the part of the hospital to purchase some of these microscopes and to lend them to students at a fee of £1 each, it being understood that, "who breaks, pays." There is a great difference between £7 and £1 as regards a medical student.

In my next I purpose to enquire into the various temptations that environ the medical student, and trust my remarks will be received in the spirit they are made.

Your obedient Servant,

AGATHOS.

To the Editor.

Sir,—May I call your attention to the difficulty gentlemen experience in obtaining from the authorities the usual certificate of appointments held during the hospital course. I am one among many who have applied most pertinaciously for this testimonial but am still without any prospect of receiving it. I believe that most gentlemen tire of asking, and give the matter up. Possibly by ventilating the subject in your journal a reform may be effected. I enclose my card, and am,

Faithfully yours,

ARDENT.

UNITED HOSPITAL SPORTS.

These annual sports were held on Saturday last, at Lillie Bridge Grounds, West Brompton, and, taking into consideration the state of the weather during the preceding and following days, we may consider ourselves very fortunate in having so fine an afternoon. The entries, as far as our hospital was concerned, were very few—in some events not more than one representative, and in two, viz., the Quarter and Half Mile, no one appeared at the starting post. The times, considering the heavy state of the running path were very fair, notwithstanding the assertion of a morning paper to the contrary. Amongst the company, which was fairly numerous, we noticed several members of the staff of our own and other hospitals. The band of the Royal Artillery, played a choice selection of music at intervals during the afternoon. The arrangements of the committee were excellent, and great credit is due to them and to the officers of the club for the way in which they were carried out.

The proceedings commeneed wlth the Heats of the 100 yards, with the following results :—

1st. Heat 1—W. D. Jefferson, King's
2nd, Heat 1—G. E. Moore, King's
3rd. Hear 1—G. R. Saunders, Bart's
4th, Heat 1—H. Tyson, Guy's

Final Heat—1, G. Saunders; 2, G. Moore; 3, H. Tyson; 4, W. Jefferson—Time, 10⅘ secs. A splendid race resulting in the defeat of Moore by 1 yd., 2 ft. between second and third.

THROWING THE CRICKET BALL. A. W. Pearson, Guy's, 105 yds 5 in; F. Earker, St. Thomas's, 104 yds 1 ft.

Some time was wasted in measuring the respective throws, over three quarters of an hour being occupied in this event. Pearson's throw was excellent.

THROWING THE HAMMER. 1, C. T. Dent, St. George's, 90 ft 4 in 2, E. Tarleton, Bart's, 84 ft 5 in.

Dent, who throws in very pretty style, won easily.

120 YDS HURDLE RACE. Final Heat. 1, G. R. Turner, St. George's; 2, J. Reader, Guy's. Time 17½ secs.

An excellent race, Turner winning by 1 yd from Reader, who unfortunately lost one of his shoes, otherwise the result might have been different.

1 MILE CHALLENGE CUP. Presented by Guy's Hospital. 1, C. B. Lewis, King's; 2, E. B. Turner, St. George's; 3, S. Bigg, Middlesex.

Turner made the running, followed by Poland at a fair pace until the sscond lap, where Lewis opposite the grand stand took first place, but was passed again by Turner. A quarter of a mile from home, Lewis spurted and running away from Turner, won easlly by 50 yds. Time 4 min. 46 sec. The following also started :—J. H. Poland, Guy's; W. Banking, Bart's; F. A. Hallsworth, Bart's.

HIGH JUMP. 1, F. Darker. St. Thomas's, 6 ft 4½ in.; 2, J. Reader, Guy's, 5 ft 3½ in.

Reader, who jumped in by far the prettiest style, again lost a shoe, thus materially affecting his chance.

HALF MILE RACE. 1, G. E. Moore, King's; 2, J. J. Mackay, King's; 3, T. D. Lewis, Bart's.

Moore waited on his men until entering the straight, when he passed them and won easily by 20 yds. Time 2 min. 8 sec.

PUTTING THE SHOT, 1, E. Tarleton, Bart's, 34 ft 5 in.; 2, W. Gray, Guy's, 38 ft 10 in.

Tarleton, who is of gigantic proportions, did not give the others a chance of getting near him, although Gray's put for a second place was very fair. Eight others competed.

QUARTER MILE RACE. 1, E. H. Howlett, King's; 2, W. D. Jefferson, King's; 3, G. Smith, Bart's. Time 54 secs.

Jefferson made the running until 200 yds from home, when Howlett went to the front and won by 20 yds. Howlett is a first-rate runner, possesses plenty of stamina, and will probably make an excellent sprint-runner.

LONG JUMP. 1, A. Brummell. Bart's, 19 ft 2½ in; 2. R. L. Batterbury, King's, 18 ft 4 in.

A very good performance, and quite up to the average of past years.

250 YARDS RACE. First Heat. 1, E. H. Howlett, King's; 2, H. Tyson, Guy's; 3, G. F. Moore, King's. Final Heat—1, Howlett; 2, Moore; 3, H. Tyson. Time 27⅗ sec.

A magnificent race. Tyson leading till 20 yards from home, when Howlett passed him and won by 1 yd, Moore defeating Tyson by 1 ft for second place. The time was exceedingly good, considering the heavy going, owing to the rain of the preceding days.

2 MILE RACE. Prize presented by S. Holden, Esq., F.R.C.S. 1, C. B. Lewis, King's; 2, E. B. Turner, St. George's. Time 11 min. 6 sec.

This was another easy win for Lewis, who also won the Mile. The time in this event was not nearly so good as usual, as everybody ran a waiting race. W. Maltby, Guy's, last year's winner, seemed altogether out of form, and has lost his former brilliant stride. Lewis running well within himself waited on his men till the last lap, when he ran through them aud won as he liked by 100 yds. Time for 1 Mile 5 min 30 sec. The following also ran—G. Smith, Bart's; W. Gray, Guy's, &c.

1 MILE OPEN HANDICAP. 1, C. W. Rendall, Godolphin School, 176 yds; 2, S. Holman, introduced, 160 yds; 3, C. H. Mason, T. H. and H., 100 yds.

Gower, who was scratch man, ran exceedingly well, but had no chance with the limit men. Rendall spurted well in the last 200 yds and won by three yards, 20 yds divided second and third. Time 4 min 23 sec.

300 YARDS CONSOLATION RACE. 1, F. Munn's, St. Thomas's; 2, J. H. Poland, Guy's. Time 36 sec.

Munns made the running the whole distance and won by 2 yards, Poland being a good second. Eleven started.

The handsome prizes, provided by Cormack Brothers, were afterwards presented by Mrs. Holden to the successful competitors.

Sydenham Dixon was handicapper and officiated as starter. The times were taken by Benson's electric clock on the ground.

The handsome shield, held annually by the champion hospital, was this year carried off by King's, who won 5 events and were second in 5.

Summary of Events.

	Firsts.	Seconds.
King's	5	5
Bart's	3	1
St. George's	2	2
Guy's	1	3
St. Thomas's	1	1

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Printed and Published for the Proprietors by O. G. BRIMMER 104 Borough High-street, Southwark, Surrey.—Saturday, July 4, 1874.

Guy's Hospital Gazette.

VOL. IV.—NO. 14. SATURDAY, JULY 11, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

We are happy to announce that there is no foundation for the rumour which appeared in our last week's issue concerning Mr. COCK's resignation of the Honorary Presidency of the Physical Society. It is not true that Mr. COCK has resigned that post, and we are very glad to find that there is no truth in the report that he was *requested* to do so, for he has ever proved its best friend, and to him the Society owes its existence.

While we regret having given publicity to the rumour, we must, in justice to ourselves, remind our readers of the absence of reliable information from the hospital authorities in matters of general interest to the student, which compels us to depend solely on information derived from our fellow-students, and on hospital gossip.

WE gave last week a full account of the United Hospital Sports, held at Lillie Bridge, on the 27th of June.

While we congratulate King's on having gained the honourable distinction of the shield, we must bear testimony to the efforts made by Bartholomew's and St. George's to gain it. They have no cause to be ashamed of their men.

For our own representatives we candidly confess that we have but scanty praise, and we are sorry that a great institution like Guy's made so poor an appearance in the friendly rivalry of Athletics. On referring to the list of events we find that PEARSON obtained the only first, READER two seconds, GRAY one second, and J. H. POLAND one second. All these are first year's men. Thus, we owe whatever success we gained to the junior men, technically speaking, of the hospital. We desire, in the name of the students, to express our grateful thanks to these first year's men who rescued Guy's from obscurity, but what shall we say of men of higher years, who, yielding to various influences, took no part in the sports? Of course we do not expect men to enter for events without some degree of training, we do not require men to go in for excessive training to the deteriment of other duties, but we do say that had there been a healthy spirit of rivalry among us the chances of gaining the coveted shield would have been greater.

Our representatives were not men who had proved themselves to be the best men in a prior trial, they were chosen by the committee of our own Athletic Club.

When we say that we were unable to hold our own sports from want of sufficient entries for the events, surely we can say nothing more sarcastic. That a hospital like Guy's, with 400 students, should have been able to afford no more than 13 entries for 10 events in our sports sounds ridiculous in the extreme, but it is no less true, and we may well lament the decline of that spirit which enabled us to carry off the shield for two successive years.

Whether the unwillingness of men to enter into athletic training arises from the small amount of our prizes, or from other causes is a question for the club committee to investigate, and no time should be lost by them in doing so, unless they would subside into mere money-collectors instead of urging men to co-operate with them, *honoris causa*.

If real hospital school work had interfered with the students' chances, we could understand our defeat, but we have no extraordinary list of men successful in examinations to counter-balance failure in the sports. Quite the contrary, for we believe that in few, if in any other years, has the ill-success in the technical part of our studies been so marked.

Possibly there may be some part of the failure due to the existence in the hospital of those most essential destroyers of Camaraderie—we mean cliques. We have no patience with

men who think themselves above their fellow-students be cause they fancy they are entitled to more consideration than the despised ones. No doubt there will always be one or two sets in any large number of men collected together, but from what we suspect, the number of sets at Guy's is legion. We will refer to the existence of cliques in a special article before long, meanwhile we would ask our readers to remember

"The *Rank* is but the Guinea stamp
A man's a man for a' that."

and ask the club committee at once to make enquiry into the causes of our decline.

OLLA PODRIDA.

THE times are changed, and people are changed, and manners are changed, and everything is changed, notably people's tastes have changed also. If our poor old ancestors were up once more, and if the eyes of those of them who could read were to fall upon this startling announcement, "to morrow, at 3 p.m., I shall burn my mother-in-law.—AUGUSTE FENERHASE,—what would they say, and what would they think? We venture to suggest that they would be glad to getting down again under the peaceful sod. Nevertheless, we were rather amused at reading the above specimen of notice of cremation grimly inserted in the *Spenersche Zeitung* a short time since. Whatever may come of the arguments in favour of cremation, should that process become general, it will certainly have to exist some time before English people admire and adopt the taste displayed by AUGUSTE FENERHASE. So much, however, on the subject of cremation has been said that we will not tire our readers with our own opinions on the matter.

We were struck with admiration the other day on looking over the *Wandsworth Times*, at the ingenious ideas of a certain quack who, through the medium of the above-named paper, determined to indulge the public with a glorious cracker:—"Testimonial.—Mr. Smith, a bricklayer, of Liverpool, has suffered 16 years from a bad ulcer in his leg, caused by a heavy stone falling on it and crushing it; he was induced to try your ointment; he used two pots, which cured him; his leg is now as sound and as well as ever, and he is deeply grateful to you for his cure." Now, that is really amusing, and it is a great pity Mr. Smith's address was not a little more definite, as we would certainly like to see him and his leg; we should like to know how many pots of this celebrated ointment will be sold in consequence of that "testimonial." One can scarcely imagine, however, any person can credit such rot; they might just as well believe the story, now grown old, concerning the hair restorer, a bottle of which was once broken by a child in its mother's kitchen, close to the back door, a short time after which accident, an excellent door-mat commenced growing on the bricks, marking the exact spot over which the magic fluid spread.

Looking for private communications at our institution is not quite like looking for a needle in a haystack, although there is something suggestive of such thoughts, especially when one is in a hurry and a little near-sighted. It would surely be a great improvement if the porter in the lodge would take the trouble to arrange the letters, before putting them into the window, something like alphabetical order, instead of tumbling them in promiscuously; this little matter ought to be corrected; it would cost nothing, which is a great consideration, and on that score may we hope to see a slight alteration made in the matter, which would be a great convenience to all of us.

Diving our fork into the olla podrida jar again, we bring up a delicious, red-looking pickle; but, oh, goodness! 'tis too hot, we are oblighed to drop it; it stings our mouths and makes our throats smart, whatever is it? We must wait another year, perhaps it wont sting us then; we must go to Lillie Bridge again!

STRAY NOTES.

We see on the notice board that there is a third vacancy for the office of Assistant Demonstrator of Anatomy. So there will be another new face in the dissecting-room to welcome the new comers next October.

The second week in July reminds us that the examination for prizes begin soon, as also does the preliminary scientific at the London University, the latter exam. being fixed for the 20th. We hope that Guy's men may be more fortunate than they were last year.

This year, although not successful in athletics, in cricket as far as we have gone, we have beaten every hospital we have played; the only two matches we have lost being Charlton Park and Blackeath Morden in both cases owing to the absence of our best men and their places being filled by II. Eleven men.

SURGICAL WARDS.

—o—

New cases admitted from July 1 to July 8.

LAZARUS

3—Painful Stump
6—Hydrocele—Radical Cure
7—Injury to Elbow—Old Fracture and Old Dislocation
16—Injury to Chest
18—Necrosis of Tarsal Bones
19—Fractured Skull—Death
22—Compound Pott's Fracture

LUKE

4—Fistula in Ano
15—Epithelioma of Scrotum and Groin
19—Syphilitic Ulcer of Leg

JOB

4—Ostitis of Humerus
8—Necrosis of Tibia
9—Psoas Abscess
15—Ulcer of Leg

ACCIDENT

6—Fractured Ribs and Wound of Lung
9—Fractured Femur
12—Fractured Patella
18—Fractured Tibia and Fibula

NAAMAN

1—Lymphoma
9—Stricture of Urethra
13—Gangrene of Penis from Injury
14—Fracture of Fibula
15—Stricture of Urethra
18—Epispadias

DORCAS.

9—Cyst in Labia and Synovitis
12—Disease of Knee
13—Fractured Femur
15—Cot—Morbus Coxæ

CHARITY.

23—Old Disease of Knee

CORNELIUS

1—Injury to Back
2—Fracture of Tibia and Fibula
3—Fracture of Femur, Humerus, and Radius and Ulna
4—Compound Fracture of Radius
5—Compound Fracture of Tibia and Fibula
6—Fractured Ribs and Wound of Lung—Death
7—Injured Spine and Pelvis, and Compound Fracture of both Legs just above Ankles—Amputation—Death
8—Fractured Femur
9—Fractured Fibula

LYDIA

No Admissions.

MARTHA

5—Large Gluteal Abscess after Injury
15—Abdominal Tumour
16—Scirrhus of Mamma
17½—Cot—Vesical Calculus
33—Cot—Run Over—Abdominal Injury
34—Morbus Coxæ

CONTAGIOUS DISEASES ACT.—Under this head we read the following in the recently published annual report of the health of the navy. The continual beneficial influence of the operation of the Contagious Disease Act on the force at the various home ports is now so fully recognised by medical officers, that they have almost ceased to make any direct allusion to it, accepting it as a well-established fact. Whenever it is referred to, it is mentioned in the highest possible terms, and the only regret expressed in connection with it is that the Act is not more extended in its application. A large proportion of the disease that exists in protected port is readily traced to importation from unprotected districts; and if these could only be reached by legislation strictly carried out there appears to be little doubt that the more destructive forms of disease might be almost altogether stamped out. The staff surgeon of the Indus at Davenport remarks, 'The number of cases of syphilis, both primary and secondary, have been very few; and the Act for the protection and examination of these poor creatures still continues to flourish and work good works. Regardless of its enemies and opponents, it still protects us from an overwhelming number of cases of disease.' On the other hand, in alluding to an unprotected port, Hull, the staff surgeon of the Audacious remarks, 'The port of Hull is the origin and cause of nearly all the cases (of syphilis), the town being a filthy focus for foul prostitutes, and native and foreign seamen, reckless, dissipated, and degraded . . . . Had the great benefits conferred by the useful Contagious Diseases Act on the more fortunate towns been extended to this port, we should not have to chronicle the fifty-four cases of secondary constitutional disease, which testify to an equal number of ruined constitutions, with the moral depravity, and consequently numerous, but necessary, punishments which must invariably follow.'—*Medical Record.*

PROPAGATION OF FEVER.—We take the following striking passage from a 'Report on the Sanitary Condition of the Rural District of Aston Union,' by Dr. Hickinbotham, Medical Officer of Health: 'Children are daily sent to school whose brothers or sisters are "down with fever." I have known often the body and bed-linen of a patient suffering from contagious disease sent to the public washerwoman without the slighest attempt at disinfection, and, on the other hand, I have known laundresses have, at the same time, a house full of scarlet fever, and of clothes to be sent home and worn by half the neighbourhood.'—*Medical Record.*

PHYSIOLOGY OF MOTION AND SENSATION

BY DR. PYE-SMITH.

—o—

LECTURE XIV.

If we compare the physiology of the ear with that of the eye we can distinguish in both organs two parts; one to protect, and to transmit the physical object of the sense in the most perfect way, and the other, the essential part of the end-organ, to receive the physical impression and turn it into a nerve-current. The waves of ether are admitted through the transparent me ia of the eye, regulated by the iris, focussed by the lens, and reproduced as nervous impressions by the rods and cones. In like manner, the waves of sound are admitted through the meatus externus, the chain of bones, and the peri-and endolymph, and then transmuted into nervous impressions by the bristles, rods, and other structures described in last lectures and just as we may divide blindness: into that which depends on opacity of the media (*gutta opaca* of the old pathology) and that which is the result of deficiency in the end-organ, nerve or ganglion (*gutta serena*, amaurosis), so deafness either proceeds from obstruction of the path to the labyrinth or from mischief to the auditory nerve, its end-organs or its centre. When you cannot light up the fundus of the eye, you may hope that the essential parts of the organ are healthy, and that as soon as you admit light to the retina, it will be seen; in the same way, if you find the external meatus stopped up with wax or cotton-wool, you may hope that by enabling a sonorous vibration to reach the labyrinth it will be heard. But when a patient cannot hear a watch placed directly on his skull, he is the subject of essential (and probably irremediable) deafness.

As with light, so the first physical property of sound to consider is *intensity* or loudness, depending on the amplitude or height of the sonorous undulations. This is directly appreciated by the labyrinth, as the skin appreciates degrees of pressure. It is regulated by the muscular apparatus of the membrana tympani, which may be compared functionally to the iris. The *tensor(membranae) tympani* pulls on the handle of the malleus and tightens the membrane by drawing it inwards: this,as we shall presently see, makes it less susceptible to deep-toned sounds, and these are almost always the most powerful. Its nerve is, as you know, the lesser petrosal, which probably only passes through the otic ganglion, and is really a branch of the nerve to the internal pterygoid, and so of the motor division of the fifth. Some persons on shutting the jaw firmly, feel or hear a sensation in the ear, which may be due to contraction of this muscle. As in the case of the iris, it is still disputed whether the return from the condition of protection against over-stimulus is effected by elasticity (not of the membrane tympani, which is inelastic, but of the ligaments of the malleus) or by muscular contraction (laxator tympani). There is, however, no doubt that the stapedius (supplied by the portio dura) really pulls upon the stapes, and it probably restrains its pressure on the perilymph.

The second property of sound is *pitch*, and this depends on the number of vibrations which occur in a given time. An ordinary noise is made up of a multitude of discordant notes, but a pure musical tone consists of a single set of vibrations all of the same length, *i.e.* taking an equal time. The most acute human ear can only appreciate a certain number of octaves, and it is probable that some vibrations of too high a pitch to be heard by us are appreciated as sounds by the end-organs of other animals, just as it is possible that other eyes than ours may see the undulations of ether which we call dark, actinic rays. The tighter the membrane the higher are the notes it can appreciate

A third property of sound is what is distinctively called *quality* or character—the difference we hear when the same note is played equally loudly on two instruments, as a violin and a piano-forte, or sung by two voices. The physical cause of this difference has only lately been discovered by Helmholtz to depend on the difference of pitch in the overtones or harmonics, which always accompany a simple musical tone and make up what we call a note.

It appears probable that both these properties are appreciated much in the same way as, on Dr. Young's hypothesis, colours of light are by differently endowed rods and bulbs: namely, by the bristles, rods, hair, &c., of the labyrinth being so constructed that some vibrate in unison to high and others to deep-tones, just as a violin tuned in consonance with another will vibrate in unison when a note is struck upon the latter. This hypothesis, proposed by Helmholtz, has been verified by actual observation of the hairs which line the auditory sacs of the higher crustacea by Prof. Hensen of Kiel.*

A fourth physical property of sonorous vibrations (or a third if we consider pitch and quality to depend on essentially the same) is one which must obviously belong to any travelling undulations, of air, of ether or of water, namely *direction*. Of this our ears really give us little information, scarcely more than a man deaf of one ear could gain by turning his head in various directions and observing in what positions a sound was loudest. Animals appreciate direction, as I have already pointed out, by their moveable ears, but we practically judge whence a sound comes much more by probability and experience than may at first appear. The semi-circular canals have been supposed to be the special organs for appreciating the direction of sounds, but this could only be physically possible for vibrations conducted directly by the skull, since all others can only reach the canals by the same passage, the fenestra ovalis. And there is some reason to believe from experiments on animals and more conclusive observations on ourselves that the real use of these remarkable structures is not for hearing at all, but to give a special sensation of the position of the body in space. The feeling of giddiness and vertigo probably depends on disorder of this sense.

We have no arrangement like the ciliary muscle and lens to give us a criterion of the *distance* which sonorous vibrations have travelled; so that we are as unable to judge of this as of the distance of anything beyond the accommodating range of the eye. And, in fact, we only form conclusions on the point by experience of how loud such and such sounds should be at such and such distances. Accordingly we are as liable to illusions of the ear with regard to distance as we are to mistake the distance of mountains or any unfamiliar object beyond the range of ciliary accommodation. Good illustrations of the fallacies of our judgment both of the direction and distance of noises are furnished by the skilful tricks of ventriloquists and spirit-rappers.

* It has been suggested that the scala media of the cochlea is the special organ for appreciating musical notes. But its rudimentary condition in singing birds compared with its apparent perfection in unmusical quadrupeds seems to be a strong argument against this opinion.

The impression of a single sonorous wave lasts for an appreciable time, like that of a ray of light. This is proved by the continous noise made by a rapidly rotating cog-wheel not being altered if one or more of its teeth are removed.

Lastly, the sense of hearing, like every other, is liable to subjective sensations, though actually it does not appear to experience them as often as others. The buzzing and throbbing heard in some conditions without external noise is not one of these, for it depends on the real vibrations of blood in the carotid, as it passes through the petrous bone, and is comparable to the muscæ volitantes which are always present, but only seen when the brain is morbidly attentive. Again, the fancied sounds one sometimes hears are mental phenomena, delusions, independent of any excitation of the auditory organ. But true illusions of hearing are produced when the auditory nerve is excited, not by sonorous vibrations, but by a shock of electricity. A really subjective sound is then heard.

THE BRUSSELS CONFERENCE.

The *Hour* thinks "there is more statecraft than philanthropy underlying the Brussels Conference. It is now plainly understood that the design of the Conference is not so much to draft a treaty after due discussion, as an effort on the part of the Cabinet of St. Petersburg to obtain the adherence of the other European Powers to an elaborate ready-made code. This document, if ever obeyed, would revolutionise the whole procedure of warfare. The Russian jurists are to play the part of Agamemnon in a Homeric Council, and the other nations are to give a respectful assent by acclamation to the innocent-looking code. Accepting the the particulars of the treaty which have been communicated to Lord Denbigh as authoritative, we can easily understand the cold reception which our Government are giving to the Brussels Conference. Two of the clauses of the draft treaty which the Earl of Denbigh cited in the House of Lords are specially significant. The one is a stipulation which would give extraordinary immunities to an enemy's merchantmen on the high seas, and would seriously cripple our power in the event of a naval war. The other clause lays down the startling doctrine that when a definite portion of an enemy's country is occupied by a victorious army, that army should override all civil government, and be recognised by all other nations as the only legal authority in the land. These proposals only need statement to be repudiated by our Cabinet and its representatives. We are heartily glad to find that Lord Derby has divined the true nature of the whole plan, and that we intend to keep our principles of maritime warfare in our own hands, so as not to compromise our full belligerent rights by any anticipatory treaty. The second proposition of which we have made mention would seem to refer more emphatically to a continental country like France, which is liable to military occupation as a consequence of the vicissitudes of war. No certain rules can be laid down as to the proper relations between an invading army and the political or civil authorities of the partially conquered State. We may pronounce confidently, however, that a deliberate recognition of the right of invaders, after a limited and localised success to free the inhabitants of a country from their political allegiance, will never be accorded by European Powers at Brussels."

The Berlin journals state that the German government has instructed its representatives at the coming International Congress at Brussels, to lay before the assembly, when the revision or extension of the Geneva Convention is discussed, the necessity that not only the officers, but likewise the surgeons and the troops be acquainted with the wording and meaning of the different paragraphs of the convention. For several reasons the German government has been induced to plead the necessity of the abovesaid. The German surgeons who after the battle of Weissenburg, were obliged to take up wounded French soldiers in their hospitals, soon became convinced that the latter had not the slightest idea, in most cases at least, what the white band with the red cross signified. French surgeons of high rank, who appeared in the same hospitals afterwards to look after their fellow-countrymen, did not even possess the badge and assured Prince Putbuo, the delegate of the Knights of St. John, most positively that the French Minister of War had neither provided them with this badge ordered to be worn by the Geneva Convention, nor yet commanded them to procure the same. Afterwards French officers, prisoners of war at the time, openly confessed that the Geneva Convention and the conditions of the same respecting ambulances, surgeons, and the wounded and their treatment, were quite unknown in the French army. How necessary was it for France that her armies, consisting partly of wild and savage natives of the North of Africa, should be acquainted with these same conditions. She did not consider it inhuman to send these savage hordes against the sons of Germany, but she forgot, regardles of the voice of humanity, to put the necessary fetters on their ferocity.—*Evening Standard.*

CRICKET CLUB.

ST. THOMAS'S HOSPITAL v. GUY'S HOSPITAL.

This match was played at Nunhead, on Monday last, and was won by Guy's by 72 runs on the first innings. Score:—

1st. Innings. St. Thomas's Hospital.		2nd. Innings.	
E. Tatham, b Earle	23		
W Turner, c and b Wyatt	1		
F. N. Heygate, st Reader, b Wyatt	7		
B. Pitts. l b w, b Wyatt	5	l b w, b Earle	5
R. F. Bell, b Earle	0	b Wyatt	6
R. Podmore, not out	38		
R. H. Gwynne, c Robson, b Earle	0	not out	32
A. O. Herbett, b Earle	3	st Lewis, b Wyatt	1
H. Thornton, c Earle, b Reader	4		
C. Maile, b Wyatt	0	b Earle	37
E. Gamble, l b w, b Earle	0		
Byes 6, w 1	7	Byes	9
Total	88	Total	90

1st Innings. Guy's Hospital.	
H. Williams, b Gwynne	0
I. A. Lewis, b Gwynne	2
H. Hetley, b Maile	10
R. E. Wallis, b Gwynne	8
G. W. Wyatt, b Gwynne	0
R. Steel, b Maile	0
S. Bonsor, not out	65
Phillips, c Gwynne, b Bell	13
J. N. Earle, b Turner	1
J. Reader, b Turner	4
J. Kendall, run out	4
Byes 42, leg byes 3, w 3	48
Total	155

CORRESPONDENCE.

—o—

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—The hospital green book * states, page 39, that "special certificates are given to those gentlemen who have attended one hundred cases of midwifery."

There is a report going about the hospital to the effect that such certificate is now no longer given. Can you inform me what truth there is in this, or will some of your readers kindly do so?

However good it may be for students to do one hundred cases, yet it is hardly fair to lead them on with a promise which is not to be fulfilled after they have worked hard to gain the certificate.

I am, Sir,
Your obedient servant,
MAIA.

July 8th, 1874.

To the Editor.

Sir,—I am sorry to be compelled to trouble you again, but seeing some correspondence which of late has been coming from the pen of "Agathos," and which to me is really an unintelligible jumble of grumbling and growling, unspiced with any idea of originality beyond the absurdity of their conception, has made me once more take up my pen to ask "Agathos" what he means.

In refereuce to his letter on the study of Physiology, I think such an effusion is one which cannot be characterised as empty, in that it contains that, Sir, which I believe to be at once disastrous to the school and discreditable to the writer; fortunately the paper does not get into the hands of those who know not how to estimate and value the statements put forward iu the letter in question. In allusion to the "noise and foolery" going on during the lecture on Physiology, I give the most uuqualified denial to the statement of the lecture being inaudible, that there are interuptions more frequent in occurrence than they ought to be, I do not for one moment wish to deny, but I say emphatically that if any man enter the lecture theatre with a desire to hear all the lecture, he need not be disappointed; those to whom the lecture is inaudible are those and those only who take part in or allow themselves to be interested in the little bye-plays that will always exist where 105 young gentlemen are gathered together, many against their will. As for the feeling of disgust that "Agathos" says is prevalent amongst students on witnessing the experiments performed on live animals I can say with truth that during my attendance I never heard any such expression of feeling and I firmly believe it to be an entire fabrication or creation of the fertile imagination of "Agathos" who may, perhaps, in his attacks be seeking to find some shallow excuses for his very regular attendance at the lectures in question. Probably it may shock "Agathos" to see a frog which has been decapitated jump about the table, but when his knowledge expands from the promising bud that it is he will learn there is no occasion for his anxiety. Passing on to the consideration of the next sally of this gentleman we find him again dilating on his favourite theme of imbibition, the sum and substance of which is that he thinks a physiology lecture does not commence till 4.15 p.m., there is ample reason to account for this disturbance in lecture to be found in the fact that the students are beginning to get inebriated at that hour of the day. That insinuation is as unjust as it is unmerited. It bears with it great significance in that it helps us to know the character of the writer, and introduces us to the stamp of men that he has for his friends and knowing this we may be the better able to estimate fully the value of such expressions.

Now, Sir, in reference to the microscope class, I would say that there is no instrument which will prove more useful to a practitioner in many ways than the microscope. Indeed, so fully has its need been felt that every ward in the hospital is provided with one, and the calls for use is continuous, in that to follow carefully a great many disorders through their different phases the use of the microscope becomes entirely indispensable; that a knowledge of the microscope is necessary "Agathos" does not deny, but how can a man learn anything of the microscope unless he possesses one of his own? Of what service is three months' work with the microscope if discontinned at the end of that time? None. For why? See here. The three months' practical physiology class merely teaches you how to manipulate with the instrument so as to be able to use. and further, it instructs you how to prepare specimens and be able to recognise the more ordinary elementary tissues of the body normal. If the subject be here dropped of what service is the knowledge of it in practice? Morbid constituents of the urine in dieease, the forms of parasitic diseases of the skin, the histological change going on in viscera when diseased, how would knowledge on all these heads be advanced if a student only hired a microscope for three months, and after that were to go without one, the object of the class would be completely frustrated. I am afraid of infringing on your space, or I should like to say more on this topic.

I shall read wlth intense interest "Agathos's" next letter on the temptations that environ the student, as I feel he will be more qualified to write on that head than on any other subject he has hitherto attempted.

I am, Sir,
Yours obediently,
AMICUS.

---

* Prospectus.—(Ed. G.H.G.)

COMMUNICATIONS RECEIVED.

Mr. E. Duke, Mr. Edmuud Aikin, Mr. Hugh Massey, Dr. Henry B. Wood, Mr. A. E. Blacker, Mr. J. F. Cogin, Mr. W. P. Mallam, Mr. W. B. Smith, Mr. J. T. Jones, Dr. A. Taylor, Dr. John Gill, Dr. T. Osborne Walker, Mr. W. H. Jalland

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Guy's Hospital Gazette.

VOL. IV.—NO. 15. SATURDAY, JULY 18, 1874. 13 Nos. Free by Post, 2s. 6d. TWOPENCE

LADIES are popularly supposed to possess a peculiar immunity from criticism, and conceding that they are the weaker sex, we cannot refuse to view their errors with e nignity. But when a lady by conformation, of her own accord, throws off the Ægis of her sex, challenging the "fierce light of criticism," we treat her as we should one of the male sex, and comply with her wishes. None of our readers who see the *Times* can have failed to notice a correspondence as to the fairness or unfairness of the rejection of Miss SOPHIA JEX BLAKE at her examination. We do not ourselves remember having ever known a plucked student, who was refused on his or her merits—in the opinion of the plucked one. There has always been some hidden snare or some masked battery unveiled at the last moment contrary to expectation, or the examiners are accused of professional or personal spite, in fact every cause is assigned by the featherless biped for his failure except that of laziness, ignorance, or stupidity. But at the same time opinions like these, as far as we recollect, were confined to the family circle or to select friends. No one of these unfortunate individuals has ever been rash enough to rush into print before, and it has been reserved for Miss JEX BLAKE to shew how effrontery can be wedded to ignorance in a woman.

It would hardly be credited that Miss JEX BLAKE wrote to the leading newspaper and charged the Examining Body with suppression of truth and a determination to pluck her. Such is the sympathy elicited by the sight of a woman in distress, however deserved, that we fear some sentimentalists will still believe in her grievance notwithstanding Professor HUXLEY'S able and temperate letter, which completely refutes her accusation.

Whether the imprudence and impatience of supervision shown by Miss JEX BLAKE and her friends will increase their credit in the profession they have chosen, we venture to doubt. If she is not too proud to take advice, we would acquaint her that

> "Every wise woman buildeth her house
> But the foolish plucketh it down with her *hands*."

on the authority of SOLOMON.

We promised in our last week's leading article to discuss the subject of "Cliques" at our hospital, and we are the more impelled to do so by the urgent necessity that there is for some reform in this matter.

There is no difficulty in understanding that there must always be among any large number of young men some who work and others who play—with this distinction of parties we have nothing to do. Again, Nature provides another subdivision—that of genius—and of stupidity. With this distinction also we cannot quarrel, but when one or students choose to consider themselves the most gentlemanly and best dressed men at the hospital, setting themselves up as the judges of good taste, and considering themselves—

> "The glass of *fashion*, and the mould of form.
> The observed of all observers,"

and when such claims to infallibility rest on no great proportion of brains—on no amount of genius beyond the average—on no striking success in the battle of life—we are lost in astonishment that there are men who are found to believe in their superiority. For this superiority—real or fancied—is at the root of all disciple-making, humiliating as the confession sounds. A man has only to affect some superior attribute, to be reserved in his speech and actions, and to hold himself rather aloof from friendships—and he

will sooner or later persuade his surrounders that this method of proceeding hides great talent, or some quality fitting the possessor to be a leader of men.

Like sheep who follow a bell, so students flock round their leaders, and with less excuse unless some Darwinian will grant only the same amount of intelligence to men that sheep possess.

Again, we say—and we hope we shall not be misunderstood, that the superiority of genius must make admirers—but we must protest vehemently that because a man happens to be able to afford a better suit of clothes than another, or because his private expenditure is more profuse—therefore he is a person to be admired and an example to be followsd.

We have at Guy's many cliques, one or two large and powerful, comprising the greater part of the men, and from their object and influence able to do much good amongst the students, could they but cordially agree. These parent cliques, if we may so term them, include a number of others —or are divided amongst themselves. We suppose it is no secret to the studeuts that there is an athletic, a Bible class, a billiard, a cricket, a football, and many other cliques, for we have frequently heard complaints of the injustice of one or the other.

Our advice to young men mimicking their elders, and playing

"Such fantastic tricks before high heaven"

is to leave off an imitation so unworthy of them is to remember that the noblest summary of ethics, the briefest as well as the higheet code of Law, enjoins us

"To do unto others as we would be done by."

We have been partly induced to make these remarks by learning that some of the articles and letters that have appeared in our columns have displeased a certain clique in the hospital, and that this clique has dared to threaten the suppression of the *Gazette*, thereby annihilating free discussion.

We are content to allow the *Gazette* to stand on its own merits, and can assure our readers that as long as we are the Editors of a student's paper their interests shall never be burked by any hospital clique whatever.

STRAY NOTES.

The following Guy's men have passed their First College; On the 15th inst., Messrs. Gardiner and Richardson; on the 16th, Messrs. Brett, T. Richards, T. W. Richards, Grimwood, and Parker.

We are glad to receive the following communication from the Hon. Treasurer of the Janitor's Fund:—

The subscriptions to the Janitor's Fund already amount to a fair sum, viz., £44 14s. 6d., £23 18s. being paid, and £20 16s. 6d, being promised. Subscriptions may be paid to the following committee:—Messrs. Parker, Powell, Travers, Taylor, Cotton, J. H. Poland, and B. Jumeaux, hon. treasurer.

We see in the medical and daily papers that Mr. Le Gros Clarke has been elected president, and Sir James Paget, Bart., Mr. Prescott Hewitt, vice-presidents, of the Royal College of Surgeons for the ensuing year, at a general meeting held on the 9th inst.

PHYSIOLOGY OF MOTION AND SENSATION.

BY DR. PYE-SMITH.

—o—

LECTURE XV.

The organs of the sense of TASTE are less certainly known (and perhaps actually less differentiated) than those of smell, sight, and hearing.

It is appreciated most perfectly in man by the posterior third of the upper surface of the tongue, the fauces and soft palate, and less so by the tip and sides of the tongue, and the back of the pharynx. In some of these parts no special *end-organs* exist, but they have been found in the walls of the circumvallate papillæ by the Swedish anatomist. Loven, and consist of hollow, oval spaces, surrounded with long, granular, nucleated, fusiform cells, arranged like the planks of a barrel.

These sacs open by a narrow orifice upon the surface of the papillæ. Within are long, slender corpuscles, each with a large nucleus and a fine, hair-like, free extremity. At the attached end these are prob bly directly connected with the axis-cylinders of nerves. These "taste flasks (Geschmacksknospen, Geschmackszwiebeln of Loven, Schmeckbecher of Schwalbe), with their external cover-cells and internal taste-cells, have been now found, more or less modified, in man, the dog, cat, horse, pig, several ruminants and many rodents. I have copied these diagrams from Engelmann's figures, but here you see the structure containing them in the tongue of the rabbit, where they line the grooves of these two oval taste-disks. The conducting nerve of the sense is the *glosso-pharyngeal* which supplies the circumvallate papillæ, but it is possible that the lingual branch of the fifth though a nerve of common sensation may also transmit impressions of taste. Since, however, the glosso-pharyngeal sends a long branch forward to the tip of the tongue, it may be the channel by which this part appreciates taste.

If this be so, it follows that the only *centre* of taste is the nucleus of the glosso-pharyngeal nerve in the floor of the fourth ventricle, below and outside that of the vagus.

The physical *object* of this sense is any sapid substance *in solution*. Almost all tasteless substances are insoluble, and water itself can scarcely be considered an exception, for the end-organs being constantly moist we could no more expect to taste water than to see the fibres of the lens, or to hear the blood in our carotids, or the music of the spheres. But gum is an example of a substance which is soluble yet tasteless. We cannot distinguish the physical properties of sapid substances, as we can those of undulations of light or sound: nor even guess what common property it is which gives the quality of "sweetness" to glycerine, sugar, and acetate of lead. Still some chemical property seems to make acids "sour," neutral soluble salts "saline," preparations of iron "astringent." The sense of taste is easily fatigued, as in the experiment of tasting wine blindfold, and may be paralysed by cold: for this reason bad champagne is iced.

Beside the proper effect of sapid bodies, much which we call taste is made up of (1) *odour*; (2) *touch*; (3) *temperature*; (4) more general and undefined sensations of the stomach on the entire system, which we call relish, nausea, satisfaction of hunger. As with the other senses, we may have subjective tastes from electrical irritation of the end-organ, or mental action on its centre; and the latter may be strong enough to produce the reflex effects of salivary secretion or of vomiting.

The other special sense acknowledged as such is only *touch*: but this is only one of many more or less distinct sensations, the machinery of which is as yet imperfectly known. I will, therefore, first describe these drawings of the remaining end-organs which have been hitherto discovered, and then briefly point out the functions of sensation not included in sight, sound, smell, or taste.

[The following organs were described:—

1. Corpuscula tactus (Wagner, Meissner): in the papillæ of the hands and feet, especially the last joints of the fingers, in the lips, nipples, &c. (Dr. Thin's figures: *Journal of Anat. and Phys.*, Nov., 1873).

2. Corpuscles of Pacini or of Vater; found on the nerves of the human hands and feet, as well as some other parts; but most easily demonstrated in the mesentery of the cat.

3. End-bulbs or "clubs," discovered by Krause, in the conjunctiva of man and other animals.]

In each of these organs (and probably others remain to be detected) you see that a single medullated nerve fibre loses its sheath, and its axis enters a compact mass of tissue in which it ends.

TOUCH.—This is closely connected with the papillæ of the cutis vera, so that when these are destroyed (*e.g.* by a severe burn) it no longer exists; and it is scarcely present in mucous membranes. Its physical object is mechanical pressure. The chief quality is the sense of locality. This, like that given by the eye, is essentially dependent on the receptive structures (the terminations of the cutaneous nerves) being distributed over extended surface; but, as with sight, the perception of locality derived from touch alone, is greatly increased and corrected by combination with movement. The degree of discrimination of different parts of the skin has been investigated by Weber. (In repeating his experiments on yourselves you will find individual differences). He ascertained that the tip of the tongue is the most sensative to touch; it can distinguish two points $\frac{1}{24}$ of an inch apart · while the tips of the fingers, which come next, can only do so when they are separated by the twelfth of an inch. If you touch a hollow tooth with the tongue, the cavity seems much greater than it really is, for we refer the sensation to the standard derived from the fingers. Next come the lips: blind persons whose fingers have become callous have found they could read with their lips. The arms, cheeks, and other parts are far less capable of discrimination; and if we may compare the tongue and fingers to the *macula lutea*, the skin of the back, where two points must be two inches apart to be distinguished, answers to the circumference of the retina. You will find your power of discrimination increased (1) by beginning with large distances, (2) by first touching with one point and then the other, (3) by attention, (4) by practice; these differences depend on characters common to all functions of the nervous system, viz., (1) and (4) depend on education, either rapid and probably only functional, or more slow, permanent, and organic; (2) on contrast; (3) on voluntary determination of nervous energy, the difference between seeing and looking, hearing and listening, dreaming and thinking. Again, the sense of touch like the rest may be blunted by fatigue, or paralysed by too violent excitement. Thus, if you press a ring on your arm, the power of discrimination is diminished within the circle; and excessive pressure is not recognised except as pain. Lastly, a striking instance of subjective sensation is given by patients who will tell you that they feel their limbs after amputation: the impression is made on the end of the nerve in the stump, and transmitted to its centre and referred to its accustomed termination.

Sensations which are allied to, but distinguishable from, touch are those of *tickling*, *itching*, *formication*, *numbness*.

Of these itching seems to belong to the papillæ of the skin, and hence is only felt in superficial diseases as eczema and psoriasis, or when a deeper injury is being repaired, as in a healing ulcer. The pruritus sometimes experienced in jaundice is a good example of a subjective sensation.

More obviously distinct from the sense of touch is that of TEMPERATURE. The special end-organs or fibres of this sense are probably in the skin, for it can be fully appreciated nowhere else: heat or cold when applied to an internal organ or to a raw surface is either not felt at all or is only recognised as pain. This, however, is not the case with the mucous membrane of the mouth, which seems to show that these sensations are less special, less differentiated than taste, and still less than sight. The most discriminating part of the surface for degrees of heat and cold is the tongue, next the cheek, then the lips, the hands,* and lastly the trunk. A large surface exposed to the same temperature gives a greater sense of warmth than a smaller one. No sense is more relative than this; the same water will seem cold or hot as we come to it from a higher or a lower temperature. If you plunge your elbow in melting ice you will feel cold there (from the nerve of Wrisberg) and pain in your fingers (from the ulnar branches). You will often have occasion to observe a remarkable instance of subjective sensation, in the feeling of cold which makes a patient with fever shake, while the thermometer shows that his skin is really burning.

There are some sensations which are so ill-defined both in nature and locality that we can only describe them as affecting the whole body with comfort or discomfort. Such are *hunger* and *thirst* want of breath, drowsiness, and the muscular impatience of a healthy and particularly a young

* If you hold the back of your hand to a fire you will feel pain before you feel much warmth: hold the palms at the same distance and you experience great warmth without its rising to pain.

animal after food and rest. Such are multitudinous, dimly perceived sensations of organic life, which tell that the stomach, the heart, the lungs, the skin, the muscles are all accomplishing their due functions. Together they make up the most "massive," substantial and necessary of bodily pleasures—that of health. Their disturbance constitutes the misery (apart from actual pain) of the invalid, and their restoration to a normal condition after sickness is heightened by the force of contrast and the help of memory and of hope into the joys of convalescence.

A feeling which is difficult to localise, is that which is known as the MUSCULAR SENSE. Its existence has been disputed, but you can easily convince yourselves that it is distinct from that of mere pressure by laying the same weight on your hands, first supported on the table and then held free. Like other senses, it is most developed in one part of the body, the upper extremities: and like the rest it is capable of education, so that one man will be able to discriminate between much smaller increments of weight than another. There is a remarkable form of disease you will often observe in the wards and out-patient rooms, in which the patient can move his muscles and has not lost sensation, but he cannot "co-ordinate" or arrange the several muscular contractions so as to perform any combined action. As the affection usually shows itself first and chiefly in the legs, it is known as locomotor ataxy. If we judged from the alterations found after death in these cases we should place the centre of the muscular sense in the posterior columns of the cord. It is, however, rare to find sensation perfect in ataxia patients; and neither clinical discrimination nor morbid anatomy have said their last word on the subject. We may ask whether this muscular sense is conducted by afferent nerves at all, whether it is not rather a consciousness of effort, of a voluntary direction of an efferent nervous stream from motor ganglion-cells to muscle-plates. At all events, it is distinct from ordinary sensation in muscles, which are almost insensible to touch, pain or temperature. The "cramp" of voluntary muscles and of colic is alike caused by irregularly contracting fibres squeezing nerve-branches which run between them. Perhaps the fact that increased muscular action, when independent of the will, is not recognised, may be accepted as an additional argument. A hert will hypertrophy, and labour energetically to overcome an obstacle to the circulation, but there is no muscular sense of its contractions; and they would be unrecognised, but for the heaving thud against the chest-wall, and the sense of want of air in the lungs.

There is still one variety of sensation which I have left till last, because it appears not so much to differ in kind from the rest as to result from any of them being excited beyond their normal limits. This sensation is PAIN. It is distinct from touch, with which it has scarcely more to do than with any other of the senses we have been discussing. Indeed, as Dr. Anstie has shown, a nerve which is in pain is less capable of discriminating pressure than an unexcited one. Moreover, you will come across cases of disease in which there will be pain with loss of ordinary feeling (anæsthesia), and others marked by insensibility to pain (analgesia), while the patient will discriminate pressure or temperature, or both. It seems probable that there are no end-organs of pain. It is not confined to the skin, as touch and the sense of temperature are; but may be felt in any organ which is supplied by nerves; and it alone of all sensations may be felt in the course of a nerve as well as in its distribution. Slight pressure on the skin is felt as touch; increase it and it becomes pain. Moderate variations of temperature are recognised as such, but a hot-iron or a lump of ice produces a pain which scarcely tells us whether we are burnt or frozen. It is true that injury to the optic nerve affects the sense of sight, and not of pain, but this points to the fact that sight is the most specialised of the senses. A strong flash of light is certainly felt to be painful, as is a sudden and excessive sound.

If it be true that pain depends on an excessive current in any afferent nerve, we see how subjective pain may depend on an average nerve-current affecting a weak ganglion-cell; and this is probably the explanation of many neuralgias, which are functional as distinct from those depending on injury to a nerve, and central as resulting from ill-nourished tissue, the grey matter being supplied with insufficient or thin or poisoned blood.

Apart from these cases you will find almost all pain can be traced to *pressure* upon a nerve. It is so as we have seen in cramp and colic; and the pain of inflammation is clearly due to nerve filaments being squeezed by the congested blood-vessels and swollen tissues—hence the relief to a whitlow of holding up the hand—hence the throbbing pain which is synchronous with the pulse—and hence the excessive pain of inflammation when confined by the periosteum, palmar fascia and other dense, unyielding structures, and of a blow upon skin which directly overlies a bone.

APPOINTMENTS.

At the meeting of the Medical Examining Council July 16th, the following appointments were made:—

RESIDENT OBSTETRIC—

Messrs. Forty, Fry, Rendall.

SURGEONS' DRESSERS—

Messrs. Hobson, Powell, W. Brown, Johnston, R. C. Richards, Mitchell.

CLINICAL ASSISTANT—

Messrs. Winckworth, H. Clarke, C. Ferrier, Amphlett, Newman, Wilding.

DRESSERS IN EYE WARDS—

Messrs. H. A. Collins; M. Lloyd, J. H. Vinter.

ASSISTANT PHYSICIANS CLERKS—

Messers. Edgar Duke, A. W. Green, Welchman, P. J. Jackson, R. O. Cusack, G. B. Mallam.

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EXTERNS—The appointments are not quite complete, and will be given next week.

EXTRACTS.

(From the *Medical Press and Circular.*)

GENERAL MEDICAL COUNCIL.—That "house and messuage," No. 315, Oxford Street, which had been once upon a time the College of Chemistry, has recently passed into the hands of the General Council of Medical Education, at an annual rental of £300, and after an expenditure by the Government of £1,500. On Thursday last, for the first time, its doors were publically and officially thrown open for the reception and grave deliberations of its new tenants, and although it is in quite an unfinished state, paintless to a great degree, carpetless in part, and we fear, we may add damp, just at present, still, from its capacity, its central position, and the accommodation it will afford for purposes bearing on Council matters, the General Council of Medical Education and Registration have very good reason not only to be satisfied with their new premises, but also to be a little vain—were it possible for so subtle a "weakness" to penetrate into the midst of such an august assembly—of their leasehold.

(From the *Sanitary Record.*)

NATIONAL HEALTH SOCIETY.—At a recent meeting Miss M. E. Beedy, M.A., read a paper bearing the title 'On the Work of Women in relation to Health,' the papers and the discussion upon it, dealt principally with the question of medical practice and its method of procedure, an alteration in which might lead to a special work of women. The lecturer divided her subjects into two branches, 1. As to the sanitary work women may be expected to do, and ought to do for society in general; 2. As to the sanitary adaption of the work of women to the present peculiarities of mental and physical strength. The first of these could only be dealt with on the occasion. This Society, through Miss Toulmin Smith, the secretary, has offered to the London School Board a sum of £100, to be invested by the Board, the interest arising therefrom to form a fund for annual prizes in elementary or applied physiology, to be given to the girls in any board school in which physiology is taught. The offer has been accepted by the School Board.

(From the *Medical Record.*)

TRICHINA SPIRALIS.—In the post mortem examination of a man 73 years of age, Professor Klob, of Vienna, lately found all the muscles of the body studded with thousands of trichinæ, mostly calcified, but some still alive. The man had died of marasmus. He had not left Vienna for ten years; but had previously spent some time in Germany, Dr. Klob believed that the invasion of trichinæ must have occurred at least fifteen or twenty years ago.

ABSCENCE OF OXYGEN IN THE WATER OF ARTESIAN WELLS.—M. Gerardin, in a paper read to the Paris Academy of science descriptive of the artesian wells of Grenelle, finds there is no oxygen present in the water from the lower sandstone of this locality, nor from the Rilly gravel beneath the clay, and at contact with the chalk (the water was obtained out of contact with air from various depths by means of a syphon invented by the author, nor from the Soissonais gravel. Neither was this gas discovered in the water from the artesian well at Gonesse. M. Gerardin concludes that water obtained from subterranean depths does not contain oxygen if kept from contact with the atmosphere. This precaution is essential, for in contact with air it dissolves several cubic centremetres of oxygen. The author has often found in the interior of the ascension tubes long white filamentary algæ. These algæ present the curious property that they remain white in solar light as long as the water is deprived of oxygen; but they become green the instant the water is the least aerated. Their sensibility to the action of oxygen is the most delicate. The action of the algæ serves to confirm the chemical test with hyposulphite of soda.

CORRESPONDENCE.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—I am not one to bring forward sweeping reforms, or to propose any change which could prove injurious to any man, but the reform which I propose, and for which I beg the powerful aid of your journal, is one which can but be beneficial to the staff, the students, and the patients who attend this hospital. At present the assistant-physicians' clerks have given to them eight cards for distribution amongst the male, and twelve for distribution amongst the female medical out-patients, and a larger number, though a similar ratio of tickets for the house-physician to be distributed amongst the worst cases. Now, laying aside the fact that the clerk himself is not always so acute as to be able to discern the worst cases, whom he may thus unconsciously send away unrelieved, why on earth should the rest of these poor people be sent away unseen? It cannot be beeause no men can be found who would care to see them, as the competition for the post of house-physician would at once negative. These people have many of them been put to the expense of a railroad journey to get hospital advice, they have all had to wait several hours, and they have all lost a day's work, and been put to a great inconvenience, and those who are unseen, have done all this, to no purpose.

Why, then, should not a second house-physician be appointed? If there be not sufficient work in the medical wards to employ two house physicians, let another be appointed solely to see the surplus out-patients, and I am sure that there will be no lack of candidates for the appointment. Does it not seem folly to throw away this chance of instructing a man in his profession, and cruelty to put these poor people to expense and inconvenience, and after all, to send them away empty; and all for the lack of a second house-physician, whose appointment would be eagerly sought after? I enclose my card, and remain, Sir, yours, &c.

T. D.

To the Editor.

Sir,—I much regret that my last letter to you should have so roused the ire of "Amicus," and rendered his life intolerable until he had rushed into print. Truly the cacoethes scribendi is strong on him, but he ought not to allow himself to be led away by any impulse from the strict truth. Were I conscious that I had in any way mis-stated a fact or offended against good taste, the ungentlemanlike sarcasms of his letter might perhaps have annoyed me, as I am sure they did your readers. But feeling, as I do, that I have only tried to do my duty in calling attention to the plague spots of our hospital, and have done so with a palliating hand, I cannot accept random words as a real criticism of my letter. Such a criticism as it pretends to be perhaps you will give me space to examine. I am characterised as a grumbler and growler. Surely such an accusation from the pen of "Amicus," whose last letter in your valuable *Gazette* is still fresh in my memory, is like the old tale of the pot calling the kettle black. Why, if we both have the welfare of the hospital at heart, should "Amicus" object to my grumbling. Does he wish to create the monopoly for himself?

My attendance at lectures on Physiology, whether frequent or otherwise, cannot be known to "Amicus," unless by chance he have discovered my personality, in which case he has no right to refer to it, but to his "unqualified denial" of the "noise and foolery" obtaining at the lectures, I must ask you to oppose his own statement of the "interruptions being more frequent *than they ought to be.*"

"Amicus" is possibly one of those gentlemen who believe that man possesses a monopoly of pain, and consequently that a frog having been *frozen* feels no pain on being suddenly plunged into *hot* water—an experiment I saw performed by the lecturer. To judge by the frog's antics, I should have said the animal was extremely sensitive and manifested its distress in the only way it could. The cruelty of such an act, and its influence on man's nature is not to be passed over and lightly referred to because "Amicus" *facetiously* supposes my disgust at such an exhibition is feigned to cover non-attendance at the lectures in question. We are told in history that Nero fiddled while Rome was burning, that a tyrant of old asked a man whom he had caused to be flayed alive whether he would like a coat to keep him warm. The joke of "Amicus" seems to me to be of this kind. For my part I believe Coleridge was right—

> "He prayeth well, who loveth well,
> Both man and bird and beast

and I would recommend "Amicus" to think over these lines.

I must confess I cannot understand the reference of "Amicus" to myself and the stamp of men I have for friends. Here is another personal allusion which to my thinking good taste would never have made. If your correspondent means that I am a total abstainer, I beg to inform him that I am not so, but like a glass of beer *at proper times*. But whether I am an abstainer or not cannot affect my statement as to the condition of some of the students at physiology lectures—a statement which I unhesitatingly re-affirm.

There remains, then, the microscope question, in which "Amicus" has mistaken my opinion. I never said that men were only to use a microscope for three months. I suggested that they should not be obliged to pay so much money for the article, as he will see if he will do me the favour to re-read my letter.

I had intended this week to have described the temptations which surround a medical student, but I find that my letter will be too long if I expatiate as fully as I hsd wished on them, so I will ask yeu to allow me to leave my remarks on the subject till next week.

Your obedient servant,

AGATHOS.

CRICKET.

GUY'S v. WEST MALLING.

This, the last match on our list, was played at Town Malling on July 10th. The result was a draw in favour of Guy's, and this would not have been had not two of our bowlers disappointed us at the last moment, as is by no means an unfrequent occurrence. We managed to get our adversaries out for 201—an innings which occupied the greater part of the afternoon, so that when Guy's went to the wickets they had less than an hour and a half to knock off the runs. Lewis and Williams went to the wickets first, and by some good play raised the score to 41, when Williams was bowled for 19. Hetley joined Lewis, and by some plucky hitting the score was raised to 143, when time was called.

1st Innings. West Malling.	
Rev. H. W. Snell, b Wyatt	1
H. T. Hayman, run out	33
W. S. Norton, l b w, b Hetley	41
H. Leney, b Earle	46
L. A. White, c Bonsor, b Hetley	11
Herbert White, not out	24
B. Norton, c sub, b Wyatt	13
Henry White, b Wyatt	6
W. Viner, b Phillips	8
H. Breton, c Phillips, b Earle	3
Major Bailey, st Lewis, b Phillips	0
Byes 7, leg byes 6, Wides 2	15
	201

1st Innings. Guy's.	
J. A. Lewis, not out	63
H. Williams, b Leney	19
H. Hetley, not out	58
J. H. Earle	Did not bat.
W. Wyatt	
S. Bonsor	
H. W. Phillips	
H. R. Smith	
O. Edwards	
Byes 1, leg byes 1, wides 1	3
	143

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WE understand that Messrs. GOLDING-BIRD and JACOBSON have been appointed Assistant-Demonstrators—that Mr FREDERICK DURHAM is to be Surgical Registrar—and that Mr. DAVIES-COLLEY will take the Operative Surgery Class. Such changes cannot fail to increase the efficiency of the hospital.

THE Summer Session of 1874 is over, and the greater part of our fellow-students have begun their vacation. We hope that they will enjoy themselves, each in his own congenial tastes, and will return for the Introductory Lecture on October 1st, refreshed in body—and eager for instruction in mind. Those of them who are present at the Introductory will have the pleasure of hearing our most distinguished physician, Sir WILLIAM GULL, deliver the justly-popular lecture.

THE *Gazette* will not appear *every* week during the vacation; it will be published and sent to subscribers as matters of interest require. We have no wish to conceal the reason of this spasmodic issue. It is due to the lukewarm support of the students and to the backwardness of some of our country subscribers. In the matter of its students' paper, as on every other occasion, Guy's is divided against itself.

PHYSIOLOGY OF MOTION AND SENSATION.

BY DR. PYE-SMITH.

—o—

LECTURE XVI (*Conclusion*).

Looking back once more to the simplest form of an excito-motor apparatus with which we started, you must be struck with the great variety of sensory phenomena we have discussed, in comparison with the simple discharging or efferent effect, namely, muscular contraction. But remember that the number and complexity of sensations depend on the addition of the mental factor of consciousness. An afferent nerve current is always the same and is as simple as an efferent one; but the specific energy of the various sensory nerves depends on their end-organs and their central connexions, and on the mental perceptions which they excite. Without these, every nerve is in the condition of that in the fragment of a recently killed frog, where any irritant produces a reflex movement. We observed this in the most special sense of all, vision, for the stimulus of light on the retina of a man in liquor produces no phenomena of vision, but only reflex contraction of the iris.

Now we have seen that the control of the mind (through the cerebral hemispheres) over sensations and movements is a varying element, which can be traced in different degrees, through more or less voluntary, more or less reflex functions, from those in which our will has no power over action, nor perception any part in sensation, to those in which the will appears to be wholly self-originated and uncontrolled, and perceptions seem to deal with mental ideas unsuggested by any sensation. We traced the same progression from the fœtus to the adult, and from the lowest animals and even from plants up to man. And, in like manner, we must, I believe, regard the specialization of senses as relative not absolute. The most specialized is that of sight, where the afferent nerve seems incapable of transmitting any message but that of light: hearing is perhaps somewhat less differentiated: smell decidedly less: with taste we found touch and smell beginning to mingle; touch itself cannot be precisely and accurately separated from the other perceptions which come under the popular notion of feeling. These perceptions become less and less "special," or differentiated, until we reach the vague and almost unconscious sensations of comfort and discomfort, without locality, without definite physical object, and without ascertained organs.

For the same generalization which we notice in the perceptions, or conscious effects of sensations, may be also traced in their organs, from the highly differentiated structures of the eye and ear to more simple end-organs, which

we can only suppose to be connected with touch; and on to the absence of any special end-organ for the more general sensations of which I spoke in last lecture.

At the bottom of the scale we arrive at a condition of function resembling that of animals without even rudimentary organs of sense; when light, and sound, and pressure, and all other stimuli appear to produce the same generalized sensation, which is neither sight nor hearing nor feeling, but something common to and underlying all; when perception is reduced to a minimum, so that pain becomes (we may hope) impossible, and pleasure only the dim satisfaction of a man in healthy sleep; where muscular contractions are all reflex and succeed afferent stimuli with the mechanical regularity of well-made clock work or of our fragment of a frog.

Before leaving the subject of motion and sensation, it will be well to pass the several nerves in a rapid review of their functions.

1. The olfactory nerve has no other function than to conduct sensations of smell.

2. The optic is an equally specialized afferent nerve for sight. The chiasma made by the two nerves is, as you see here shown, only partial. Some fibres (commissural) pass from centre back to centre, and from retina to retina. Of the rest only the inner fibres of each nerve cross. Hence the impressions from the outer (temporal) half of the right retina, and the inner (nasal) of the left (which are the parts affected together by an object on the left hand) are conducted to the right optic lobe, while those from the nasal half of the right and temporal of the left (on which the rays from an object on our right hand fall) are conducted to the left ganglion. The arrangement, in fact, is like that of a the reins of a pair of horses, when the inner-ones only cross, so that the right rein pulls both horses to the right and the left to the left.

3, 4, 6. These efferent nerves form a natural physiological group. Notice that the right sixth and left third work together and *vice versa*. Also that the third supplies the levator palpebræ, the sphincter pupillæ and the ciliary muscle, as well as the three recti and inferior oblique. So that when it is paralysed, there results, (1) ptosis, (2) dilatation of the pupil, (3) presbyopia, (4) external strabismus.

5. The trifacial is a compound nerve. Its afferent gangliated part, corresponding to the posterior root of a spinal nerve, conveys impression from the face, tongue, teeth, ear, &c., and its motor branches move the only moveable bone of the region, the lower jaw, as well as the soft palate and tensor tympani.

7. The portis mollis is exclusively afferent.

8. The facial supplies the skin-muscles, which subserve expression, including those of the ear and the occipito-frontalis.

9. The glosso-pharyngeal, beside being the chief, if not the only nerve of taste, conducts motor branches from the pharyngeal branch of the pneumogastric to the muscles of deglutition. Its proper office is probably entirely afferent.

10. The vagus is a compound nerve, its motor branches being perhaps all derived from the accessorius Its branches may be physiologically arranged as follows :—

I. Afferent. (1) From the œsophagus and stomach. These, as well as the following branches are only capable of conveying a conscious sensation of *pain*; their normal currents are unfelt, they are strictly excito-motor. This reflex action is seen in deglutition and in vomiting. (2) From the mucous membrane of the larynx and the bronchial tubes. Their excitation also is unfelt in health, but when increased produces the painful sense of want of breath which leads to violent inspiration, or the (conscious or unconscious) stimulus which provokes a cough. Hence, when the vagus is injured or divided, the number of respirations falls. (3) Some of its cardiac branches appear to be inhibitory of the centre of the great splanchnic nerve in the cord. In the rabbit this influence is conveyed by the superior cardiac branch, so that when this is stimulated by too great pressure in the heart, the great abdominal blood-vessels supplied by the vaso motor branches of the splanchnic dilate, the blood pressure in the aorta and ventricle falls, and the heart is relieved. Hence this superior cardiac branch of the vagus was named the "depressor" nerve (*i. e.* of arterial blood pressure) by its discoverer, Cyon.

II. Efferent. These branches are perhaps all derived from the spinal accessory nerve. (1) Motor to the pharynx, œsophagus, and stomach. (2) To the larynx and muscles of the bronchial tubes (though it is possible that the latter are supplied by sympathetic branches). (3) Inhibitory on the activity of the intrinsic ganglia of the heart. The branch which conveys this influence is the inferior cardiac: hence, when this or the trunk above it is divided, the pulse is quickened, the regulating or controlling power over the heart's action being lost.

11. The spinal accessory nerve is purely efferent. Besides its own motor branches its accessory part probably confers motor power on the vagus.

12. The hypo-glossal, or motor linguæ, is another efferent nerve, whose function is to move the tongue, including the muscles which fix the os linguæ and thus give a fixed point for the hyo-glossal muscles.

The spinal nerves which succeed and are commonly so-called—though in one sense every nerve except the olfactory and optic arises from some part of the physiological spinal system—are all compound; their posterior roots conveying afferent impressions, by fibres which cross and run up deeply, to the brain; and their anterior conveying efferent impressions, which descend from the corpora striata, cross at the anterior pyramids of the bulb, and continue their course down the anterior columns of the cord.

There remains what is commonly called the Sympathetic System of Nerves. This, however, is not an independent apparatus, but is an appendage of the spinal system. It is possible that the medullated fibres found in sympathetic trunks may be all derived from the spinal cord and the grey ones from sympathetic ganglia; but both kinds of fibres are found mixed in spinal and in sympathetic nerves: it is only their proportion which differs.

The functions of the "sympathetic" bundles of nerve fibres which we dissect out are chiefly excito-motor. They are distributed to unstriated muscle—in the coats of the arteries, in the skin and mucous membrane, the iris, or in the hollow viscera. The first are called vaso-motor branches, and we see examples of their function in the dilatation of the blood-vessels of a rabbit's ear when the cervical sympathetic is divided, and that of the mesenteric arteries when the splanchnic is injured. The splanchnic is also the motor nerve of the intestines producing peristaltic movements by reflex action. The branches of the intrinsic cardiac ganglia are excito-motor for the heart. Whatever trophic influences may be transmitted in addition, we may say that the only clearly demonstrable function of nerves sympathetic is that of stimulants to involuntary, excito-motor, movement.

MEDICAL WARDS.

—o—

New cases admitted from July 9 to July 15.

MIRIAM (Clinical)

23—Pleuritic Effusion
25—Abdominal Tumour
31—Hepatic Ascites

JOHN (Clinical).

1—Acute Rheumatism—Pericarditis
2—Osseo-sarcoma Femur
3—Contracted Mitral
4—Stiff Neck
8—Enteric Fever
9—Meningitis ?
15—Contracted Mitral
16—Scurvy

STEPHEN,

1—Fibroid Heart
2—Bright's Disease
13—Pleuro-pneumonia
17—Aneurism ?
18—Phthisis
26—Hemiplegia
32—Gout
37—Acute Rheumatism
39—Mitral Regurgitation

ADDISON.

22—Erythema
32—Paralysis

SURGICAL WARDS.

—o—

Cases admitted from July 9 to July 15.

ACCIDENT

2—Fracture of Base of Skull—Death
2—Concussion
5—Fractured Fibula
10—Compound Fracture of Tibia and Fibula
17—Fractured Ribs and Wound of Lung
22—Fractured Tibia and Fibula
23—Fractured Femur
24—Fractured Ribs and Clavicle
25—Incised Wound of Legs
30—Fractured Patella
32—Fractured Femur

CORNELIUS

1—Injury to Head and upper part of Cord—Colles's Fracture
11—Fractured Clavicle and injury to Chest
5—Fractured Femur, Tibia and Fibula—Injury to Wrist and Nose
19—Rupture of Aorta and Bruise of Heart, Rupture of Abdominal Walls and Liver—Injury to Head
19—Contusion of Back

LYDIA

6—Disease of Knee
Cot-Injury to Knee

MARTHA

1—Disease of Ulna
9—Fracture of Femur—patient aged 80
14—Scirrhus of Mammæ
15—Morbus Coxæ
16—Scald
22—Fracture of Neck of Femur
Cot—Old Fracture of Radius

LAZARUS

2—Necrosis
5—Fracture of Tibia and Fibula
8—Compound Fracture of Tibia and Fibula

NAAMAN

9—Disease of Calcareo-astralgoid Joint
15—Morbus Coxæ
16—Pulpy Disease of Knee

JOB

9—Contracted Knee

LUKE

4—Gangrene
7—Pulpy Disease of Knee
11—Carcinoma (?) of Groin

DORCAS.

9—Cyst of Labium and Synovitis
12—Disease of Knee
Cot-Old Excision

CHARITY.

3—Gumma of Side
10—Large Nævus of Leg
13—Internal Hæmorrhoids
Cot-Disease of Knee—Abscess

New cases admitted from July 15 to July 22.

DORCAS

15—Disease of Neck
17—Tumour of Perinæum

LYDIA

2—Cleft Palate
3—Fistula
4—Run-over—Abdominal Injury—Death
6—Sebaceous Tumour
9—Tumour
13—Tumour below Jaw
16—Abscess—Emphysema (?)
19—Deformed Knee—Genu Valgum

LUKE

3—Suppuration about Knee
4—Ganglin
7—Disease of Knee—Pulpy
8—Acute Tetanus—Death
9—Stone in Bladder
10—Carcinoma
15—Hernia—Reduced
15—Hernia—Operated on
16—Tumour of Ankle—Myeloid
17—Sarcoma of Femur
19—Epithelioma of Lip

CHARITY

5—Wound of Eyeball
8—Fractured Tibia and Fibula—High up
12—Scirrhus of Breast
15—Ulcers of Leg
16—Spina Bifida—Age, 18
18—Degenerated Nævus
Cot-Burns

MARTHA

1—Disease of Ulna
10—Disease of Knee

LAZARUS

16—Sinus and Abscess about Hip

CORNELIUS

1—Fractured Ribs
4—Compound Fracture of Tibia and Fibula—Amputation above Knee, Bruised Foot, Amputation of Little Toe
5—Injury to Foot
7—Fractured Femur—Direct Injury
11—Fractured Clavicle and Bruised Chest
13—Fractured Sternum
15—Fractured Femur, Tibia, and Fibula, and Lacerated Wound of Nose
17—Fractured Tibia and Fibula
19—Fractured Tibia and Fibula

JOB

4—Infantile Paralysis, &c.
9—Contracted Knee
16—Disease of Neck and Jaw
18—Epithelioma of Tongue
20—Fistula

ROYAL COLLEGE OF SURGEONS

The following Guy's men passed the primary examination in Anatomy and Physiology on the 15th inst. :—

Mr. J. T. Gardner.
Mr. T. A. Richardson.

DE MINIMIS CURANDUM.

Private practice has been recently—in one of the May introductories—said to be made of little things, the relief of little aches and pains, little aids to struggling functions, and the like. Compared with the collection of a hospital, the daily list of a private practitioner would not, of course, show such a formidable set of diseases, but there is almost sure to be one case at least amongst them equal in gravity and intensity to any which can be found in the wards of Guy's. The practitioner, too, has to deal with these cases under circumstances of disadvantage—and, in the brief notes which it is intended, with the Editor's permission, to give of some of the cases to be tabulated week by week as they as they occur in country (or perhaps I ought to say, suburban) practice, some of these circumstances will be referred to. The mere names of the weekly list of diseases will serve to show to those who may not yet have otherwise ascertained what private practice is like. There are many and great variations, however, in different districts, and even in districts which are not remote from each other.

With us pneumonia is comparatively common, but some, practitioners rarely see a case; with us typhoid unfrequently, typhus never, occurs; in some practices, ague and aguish disorders are unheard of, but in this they are common enough, though they seem to be associated more with bad water and drainage than with simple position or "location." In the week of the present summer selected for the beginning of the series, the following new cases occurred :—

1. Diarrhœa
2. Severe headache (malarious)—boy
3. Injury to knee-joint (swelling of bursa beneath lig. patellæ)
4. Hæmoptysis
5. Scarlatina maligna—death on second day
6. Acute rheumatism
7. Headache—dyspepsia—dysmenorrhœa
8. Gouty eczema—despondency
9. Midwifery (simple case)
10. Acute pharyngitis
11. Simple ulcer inside lip
12. Large syphilitic sore on leg, post-syphilitic cataracts
13. Ulcer on knee
14. Dislocation of hip upon pubes
16. Apoplexy—lady aged 34, death in half an hour

No. 10 was a severe case. Patient, aged 19, could not swallow anything; water returned through the nose. No tonsilitis. Pain and tenderness behind larynx. No loss of voice. Sponge on an elastic catheter, with sol. arg. nit, (gr. 40 in 1 oz.) pushed down œsophagus as far as possible relieved immediately. As he had been ill some days, was weak and not feverish, quinine was given, and chlorate of potass drink. There was subsequently considerable mucous secretion from the pharynx; but with quinine, steel and liq. strychniæ it soon disappeared.

No. 14. The dislocation was reduced instantly by manipulation, under chloroform. Can anybody tell me how long the ligamentum teres takes to unite and become sound in such cases? Patient was a girl, aged twelve. I met her in the street (without leave) in the third week.

No. 15. A married woman, known to be the subject of nervous peculiarities, chiefly hypercesthetic, in the uterine system, and having had several miscarriages in consequence, has supper of beef and bread and afterwards faints and is also very sick. The sickness continues during the night.

Early in the morning she feels pain down the spine. While (at 9 a.m.) being examined by her doctor she suddenly complains of faintness and falls unconscious. But she is evidently not *fainting*. The pulse continues, though it is not quick, and not full, and not hard, there is no rigidity of artery (at any rate, upon the *right* side of the body). Moreover, the pupils are contracted greatly, and the left eye is inclined outwards. There is rigidity of the left arm, but not of the right. There are slight movements, shortly, as if consciousness was about to return to some extent. But the breathing is slow and somewhat stertorous. Perhaps a mustard plaister which has been placed upon the epigastrium contributes to the movements just mentioned. However, she is now uncovered and partly turned to the left side, in in order that an enema may be given, when immediately the breathing ceases, and only partially returns when she is turned back, and though the pulse continues for a time, the respirations quickly die out and the patient is dead.

Diagnosis.—It is evident that the cerebral functions were abolished first in this case, while the respiratory function quickly followed, the heart's action yielding last. Therefore, whatever the cause it attacked the brain in that order. Now unless there was some hidden disease in the substance of the brain, such as abscess, of which there was no sign during life (unless neuralgia and loss of sight of the right eye after her last confinement indicate something of this kind), then nothing but the giving way of some vessel of considerable size in the morning, and perhaps the giving way of a smaller one over night will account for the signs shown

It is to be accounted for why the iris was contracted and not dilated, while the third nerve seemed paralysed and the sixth drew the left eye outwards. Probably there was active circulation about its roots.

On the whole, I should expect to find either a quantity of blood at the base of the brain and on the medulla, or else a clot in the substance of the brain near the pons. Probably not much fluid in the *lateral* ventricles; and not much, if any, effusion of blood upon other parts of the brain.

Note also conditions giving rise to rigidity of left arm.

P.M.—Rupture (longitudinal rent) of posterior communicating artery of Circle of Willis, blood ran under arachnoid in every direction. No other lesion.

[We guarantee the authenticity of the above.—ED *G.H.G.*]

CORRESPONDENCE.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—I have lately had occasion to pass a catheter for a gentleman who suffers from spasmodic stricture, and whose urethra is very vascular, and have several times been annoyed after passing the instrument into the bladder with hardly any difficulty to find no urine flow, owing to the catheter being plugged full with clotted blood.

With a view to remedy the evil I have had an instrument made which for want of a better name I call a "closed catheter."

The catheter is of ordinary shape and length. To the end of the stilette I have had fixed a hollow tube of sufficient length to close both the eyes of the catheter, that is about one inch, before passing the instrument the stilette is pushed down, so that both the eyes are closed by the tube; after the catheter is safely lodged in the bladder, the stilette is pulled forward an inch or so, by which means the eyes are open, and owing to the tube being hollow the urine flows. The instrument is easily used, and I have found it answer admirably in cases where the urethra is vascular, for when the eyes are closed no blood can possibly get into the catheter. The instrument was made for me by an eminent firm, who tell me they have never made or seen one like it before, and having never myself seen or heard of one like it I thought a description of it would interest some of your readers, and for that reason I hope you will excuse my taking up so much of your valuable space.—I am, yours &c.,

J. T. JONES, M.R.C.S. Eng., L.S.A.

Llanfyllin, July 10, 1874.

To the Editor.

Sir,—"Agathos" in your last number speaks of the "cruelty" "of plunging a frog which had been frozen" "into hot water," an experiment performed at a lecture on Physiology. Allow me to state the facts of the experiment. A frog is introduced into a pail of ice, thus placing it under conditions similar to those under which it might be placed in winter time, *i.e.*, at a temperature of 32° F., the forg becoming torpid. Itis then placed in water at 105°—110° F., a temperature hardly exceeding that of shallow pools exposed to the summer sun, the natural consequence is, that the frog is aroused and swims about in a lively manner.

He has further referred to experiments on live animals, arousing a feeling of disgust among the men, but he has forgotten to state that they have always been performed under the influence of an anæsthetic and to illustrate some practical point it may be necessary to demonstrate. I can testify from personal experience that experiments performed upon animals at Guy's, both in public and private, have been conducted with scrupulous care in keeping the subjects under the influence of an anæsthetic. I would merely suggest to "Agathos" to leave the poets alone and keep to rigid facts.

Just as untrue are is statements, I believe, against his fellow-students of coming to certain lectures in a state approaching inebriation, and if it were so, which I do not for a moment believe, surely nothing can exceed the bad taste of airing it in the public press.

With regard to practical physiology, "Amicus" has so thoroughly answered him that I need hardly do more than remark he can know but little about the microscope or its use, for he says in his simplicity that a microscope costing £7 or £10 "is of very little use in practice, as it is not powerful enough." Has he ever visited the post-mortem room, and taken the trouble to look at the beautiful drawings on its walls? Drawings which were made by the help of a microscope, if I mistake not, costing less than the maximum sum he names.

In conclusion, Sir, I must say in common, I am certain, with nine-tenths of the senior men, that it is a grievous pity that an anonymous writer in your *Gazette* should have made statements so flagrantly absurd and so thoughtlessly untrue.

Yours obediently,

HENRY ASHBY.

EXTRACTS.

(From the *Sanitary Record*.)

THE HOWARD PRIZE ESSAY.—The subject of the Howard Prize of the Statistical Society, for 1875, is "The state of the Dwellings of the Poor in the Rural Districts of England, with special regard to the improvements that have been made since the middle of the eighteenth century, and their influence on the health and morals of their inmates." John Howard, it is stated, had himself, in the second half of the eighteenth century, rebuilt his village at Cardington, in Bedfordshire, and the subject is thus not alien from Howard's labours.

SOCIAL SCIENCE CONGRESS: HEALTH DEPARTMENT.—The following questions are suggested for discussion at the approaching meeting at Norwich :—1. In what way can dwellings be provided to replace those condemned by the Medical Officers of Health? 2. Quarantine as a means of stopping the spread of infectious diseases. 3. What is the best method of sewering towns and of disposing of their organic refuse? 4. What are the amendments necessary to the Adulteration of Food Act, 1872? 5. Results of the appointment of medical officers under the Public Health Act, 1872.

THE LESS WORK THE MORE PAY.—It is not every sanitary board which is so frank as the Bollington Local Board. It is pretty generally understood that the greater number of medical officers of health, appointed for small districts at small salaries, are put in on the strictest understanding that their duty is to do nothing, and that they are expected rigdily to perform it. They are sometimes, of course, a little tempted to step out of it, but at the risk of losing their salary if they dare do anything to earn it. The Bollington Board have decided not to apply to the Local Government Board to pay any part of their officer's salary, as that Board has the awkward habit or expecting some show of activity on the part of officers towards whose pay it contributes. The proposition to pay a salary of £20, and get half back from the Government was negatived in favour of one to give a local medical man, a member of the Board, a salary of £10, it being, as Mr. Greg, the chairman, observed, more desirable to give a medical man a salary to do a little than to do a great deal! We feel sure that this policy is not that which the chairmen of sanitary boards generally will endorse, and we cannot help thinking that the members of the Bollington Local Board itself will, on reflection, and on looking into the figures, find that to prevent disease is a true economy, and that efficient health-administration is the best banking operation in which any body of local administrators can embark on behalf of the community which they govern.

(From the *Medical Press and Circular*.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following abstract of the Report from the Court of Examiners of the number of Candidates who have presented themselves for the Primary and Pass Examinations for the Diploma of Member of the College during the Collegiate year 1873-74, showing the number who have passed and have been rejected from each Metropolitan Medical School during that period, has been issued:—

PRIMARY EXAMINATIONS—1873-4.

Medical School.	Totals.	Number passed.	Number rejected.	Percentage of rejections
University College	91	65	26	29·6
Guy's	90	62	28	31·1
St. Bartholomew's	68	47	21	30·8
St. Thomas's	52	36·50	15·50	29·8
St. George's	48·50	36	12·50	25·8
King's College	47	33	14	29·7
London	28	22	6	21·4
Middlesex	19	8·50	10·50	55·2
St. Mark's	17·50	11·50	6	34·2
Charing-cross	13·50	8	5·50	40·7
Westminster	12·50	6	6·50	52

PASS EXAMINATIONS—1873-74.

Medical Schools.	Totals.	Number passed.	Number rejected.	Percentage. of rejections.
Guy's	88	60·50	27·50	31·25
St. Bartholomew's	60·50	44·50	16	26·4
University College	51	37	14	27·4
King's College	35·50	24	11·50	32·3
St. Thomas's	32·50	27·50	5	14·4
St. George's	18	15	3	16·6
London	15·50	11	4·50	29·03
Charing-cross	12	7	5	45·45
St. Mary's	14·83	10	4·83	39·4
Middlesex	7	6	1	14·2
Westminster	4·50	2·50	2	44·4

(From the *Medical Record*.)

ÆSCULAPIUS V. BACCHUS.—At the meeting of the American Medical Association, held in Chicago, a series of resolutions deprecating the habitual use of alcoholic drinks were submitted to the meeting and passed. These resolutions, drawn up by Dr. Horner, are identical in spirit and objection with the declaration proposed by Mr. Ernest Hart, two years since, and signed by a large body of medical practitioners of the United Kingdom. Looking to the great influence exercised by medical men in modern society, in all matters of hygiene and diet, it is gratifying to find opinions of so much moment to the well-being of all classes, spreading from our small island, throughout the continent, and even across the Atlantic.

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Guy's

Hospital Gazette.

VOL. IV.—NO. 17. SATURDAY AUGUST 15, 1874. TWOPENCE

How many men there are in the scientific world who are content to travel over the ground trodden by those who have lived before them; whose ideas never expand beyond the limits of old-established facts and truisms; who are entirely devoid of originality; who have no knowledge beyond that they have acquired from the works of others. It is in the contemplation of these that we see the revelation of the truth, and the explanation of the mystery as to how it is that the progress of Science is slow, and its promoters limited to so few. We believe there are many men who have doomed themselves unworthily to obscurity because of their deficiency of courage—men, whose minds and abilities would entitle them to the highest rank in Science, lost because of their want of courage to let their ideas go forth to the world, men who fear criticism—yet here we hardly know whether it is right to say they fear criticism or whether it would not in many instances, however, be more correct to say that they are given to over-criticising their own works, creating in their own minds imaginary weaknesses in argument—and thus fearing ridicule allow their works to slip down into oblivion, and themselves to pass through the world in obscurity. Utility and Progress, the pith of Baconian doctrine, would never be promoted in any way by those who are deficient in courage, those who fear to do anything or suggest anything entirely new.

The chief peculiarity of one of the greatest philosophers who ever lived, was that his philosophy aimed at things altogether different from those which his predecessors had proposed to themselves, and the one to whom we allude lived three hundred years ago, and from the day of his death his fame has been constantly and steadily progressive, and his name undoubtedly will continue to be named with reverence to the latest ages.

Dr. JOSEPH PRIESTLEY (a statue of whom has been erected in Birmingham, which was recently unveiled and presented to the Corporation and inhabitants), was, undoubtedly, a follower of the example of the great apostle of experimental philosophy. Leaving out of the question the views and peculiar tenets held by BACON and those held by PRIESTLEY, two hundred years afterwards, we find that these two men both proceeded to their philosophical transactions under the same conditions, that is, they each disregarded the doctrines of others as considered limiting. To such an extent did this principle exist in PRIESTLEY that he himself candidly acknowledged his ignorance of many of the facts fully established by others who had lived before him, which he had not taken the trouble to make himself acquainted with.

To the majority of our students PRIESTLEY'S name is only associated with the discovery of oxygen, and as the original experiment is not generally described, we will publish it according to his own record. The apparatus he had was simply a phial filled with mercury with some of the red oxide of mercury floating on the top, which he called *mercurius calcinatus per se*; the phial he then inverted, keeping his finger over the mouth to regulate the expulsion of the mercury, whilst with his other hand he concentrated the rays of the sun with a lens upon that part of the phial containing the mercuric oxide, the heat then caused the separation of the oxygen from the mercury, and in this way oxygen was first discovered, 1774, by PRIESTLEY, "Having got," he says, "three or four times as much as the bulk of my materials, I admitted water to it, and found that it was not imbibed by it. But what surprised me more than I can well express was that a candle burned in this air with a remarkably vigorous flame, very much like that enlarged

flame with which a candle burns in nitrous air, exposed to iron or lime of sulphur, and, as I knew no nitrous air was used in the preparation of *mercurius calcinatus*, I was utterly at a loss to account for it,"

We are glad to see that Professor Huxley in his eloquent address delivered at the unveiling of the *statue*, did not forget to mention the fact of Lavosier ignoring the hints he had received from Priestley; claimed for himself *independent* investigation in the discovery of oxygen.

Priestley's style of work did more for Chemistry than one can suddenly appreciate.

The theories of Chemistry are built on facts, established by experiments. The learned Professor in his address said, "The number of discoveries Priestley made was marvellous. He was certainly within the limit when he said he trebled the number of gases in his time." In another part of his address he pointed out that Priestley's theories were minor to his knowledge of Chemistry, and from this we say he did so much for Chemistry in that he devoted his mind to that part which is the really valuable in advancement of the science, viz., discovery of facts; from facts discovered by him, others have built up the most elaborate theories, but still to us the discoverer of the fact remains the most important, and holds the most prominent position. It is not within our province to dwell upon the merits and demerits of the political opinions held by Priestley, it is sufficient for us to say that many of his fearlessly announced views, although they weremet by great opposition, have proved themselves to be truisms. Professor Huxley ably demonstrated in his address that Priestley was not only a champion and great advancer of physical science, but that he was also a champion of free thought in theology. To us the great value of Prestley lay in the fact that were he dealing with either politics, theology, philosophy, or physical science he considered facts and dabbled not in elaborate theories and unsound hypotheses.

The following startling (?) announcement appeared in the *Chelmsford Chronicle* of the 31st ultimo:—

"Witham.

"Royal College of Surgeons of England.—Mr. Charles James Davey, af Witham, having passed the required examination for the diploma, was duly admitted by the Court of Examiners, on the 22d of July, a Member of the College.

"We understand Mr Davey to be the youngest of nearly four huudred students of Guy's Hospital who has obtained both London Hall and College Diplomas, as well as the second professional pass at the University of Edinburgh."

Comment on announcements of this character may be needless, but we cannot help expressing our regret that if Mr. Davey wanted to puff his brilliant career through the press, he did not choose as a medium the columns of the paper connected with Alma Mater of which he is so conspicuous an ornament.—Ed. *G.H.G.*

NOTES ON FOUR CASES OF INTESTINAL OBSTRUCTION.

By Henry Ashby.

The following cases of death due to obstruction of the bowels are interesting, as illustrating the different lesions to which obstructions may be due.

I. A. B., æt. 21, clerk, was admitted into Bright ward under Dr. Wilks. Patient states he was at his work on Monday, but felt ill, and could not pass either motions or flatus. His bowels had been constipated the preceding week, but he had a motion on Sunday. On Tuesday he felt great pain in his abdomen, and was once or twice sick. He applied to a medical man who treated him both by enemata and aperients, but nothing passed through him. He was admitted to Guy's on Thursday night. He was continually sick on Friday. His abdomen was tense, the coils of intestines well-marked on its surface; there was great pain on pressure On the evening of the same day, violent fœcal vomiting setting in, the vomit being brown in colour, loose, and of characteristic odour. T, 101·6, pulse 120. Cheeks somewhat sunken, On Saturday, Mr. Howse, in conjunction with Dr. Fagge, at the urgent request of the friends, determined upon an exploratory operation, though the prognosis was of the worse possible kind. Temp. 102·8 pulse 130. Weak.

The patient being under the influence of ether, Mr. Howse, made an incision in the median line under the carbolic spray, and passed his hand into the abdomen. It was found necessary to enlarge the incision and pull out several coils of intestine, which were protected from the spray by lint soaked in warm, weak, carbolic acid lotion. A band was found constricting about a foot of intestine at the lower end of the ileum, this was divided and the intestines returned. The constricted intestine was of a dark red colour, and the gut above was much congested. Mr. Howse punctured the intestine in several places with a trochar and cannula, to allow of its return. The patient, who had been sinking fast during the operation, never rallied, but died two hours after.

P.M. the following day showed that a foot of intestine within two inches of the cœcum had been constricted by a band belonging to the omentum. A permanent partial constriction had been formed by means of adhesions, close to the cœcum, so as partially to obstruct the passage of its contents. The omentum was matted together from old peritonitis.

II. C. D., æt. 21, a French polisher, was admitted into Clinical under Dr. Fagge, July 24, 1874. Patient states on the previous Monday (four days before), he woke up with great pain in his abdomen. He could not pass either motion or flatus. Sickness came on on the Wednesday. He took some pills and castor oil, which only increased the sickness and pain. He was admitted into Guy's on Friday after-

noon. He complained of great pain in his abdomen, increased on pressure, it was not tightly distended, but resonant all over. Face sunken. Pulse 102, temp. 3 99. Feels sick, vomits yellowish-looking liquid stuff, apparently contents of jejunum mixed with bile.

Ordered opium gr. ii and gr. i every fourth hour. On the following morning there was less pain, but the vomiting became more stercoraceous in character, being of a yellow colour and of soured, unpleasant smell. Pulse 120, very weak, temp. 99·5. Mr. Colley having seen the patient, it was decided that an operation afforded him his only chance. Ether having been administered, Mr. Colley opened the abdomen in the median line under the carbolic spray, carefully protecting the intestines with warmed, moist lint, whilst protruding from the abdominal cavity, proceeded to search for the cause of the obstruction. Travelling down the intestines, which were red and congested, though free from effused lymyh an intussusception was discovered of ileum into ileum for about five inches, and situated within about two feet of the cœcum. This was quickly and without difficulty reduced, the intestines returned, and incision closed with deep sutures. The patient was much collapsed, but rallied after being placed in warm blankets and a stimulant nutrient enema administered. Shortly after, several pints of liquid fœcal matter were passed into the bed. Patient expressed himself as better, there was no more sickness, and pulse improved. The improvement, however, was only temporary, and he sank about six hours after the operation.

At the post-mortem there was no lymph the portion which had been invaginated was very much congested, and at its seat was a small congenital diverticulum in the intestinal wall, which had doubtless been the starting point of the mischief. Possibly a collection of fœcal matter had taken place in the diverticulum, local inflammatory action had taken place, increased and irregular peristaltic action had caused the intussusception.

No. III. E. F., æt. 53, a furniture polisher, was admitted into Philip ward under the care of Dr. Moxon, June 3, 1874. Patient states his present illness came on six weeks ago with a violent stomach-ache, followed by vomiting of bilious-looking stuff. He has got much thinner during the last month or so. His bowels since the first attack have been alternately relaxed and constipated, often suffering acute pain. He was in the Newington infirmary for stoppage of the bowels, with sickness, and was discharged relieved two weeks ago, and went to work for a week. Three days ago he was again siezed with violent pain the stomach, attended with sickness and a feeling of wanting to go to stool, but has passed nothing but a little wind for a week. He came to the out-patients and was at once admitted. Patient is a thin emaciated looking man, with sunken cheeks. His abdomen is only moderately distended, but painful and a good deal of dulness in the region of the transverse colon. He is cold and looks ill. He had not been in the hospital half an hour before he called for the chair and sat for some time straining ineffectually. Whilst at stool he said he felt something give way inside and a feeling of molten lead poured down the bottom of his back, and that he was going to die. He was cold and collapsed, sat on the edge of his bed groaning and would not lie down. His pain was relieved by morphia injection, but died five hours after.

P.M. The abdominal cavity is full of soft relaxed fœces. Nearly encircling the colon at its splenic flexure is a soft, pink, irregular growth. Near the median line there is a rent of about an inch long in the transverse colon, where the gut gave way. Microscopically the growth was a cylindrical epithelial carcinoma,* there was no secondary deposit.

No. IV. Susan W., æt. 42, a cook, was admitted into Astley Cooper ward under the care of Dr. Moxon, April 7, 1874. Her present illness she says began with great pain at the bottom of her stomach and sickness, about last Christmas. This was relieved by aperients. She has suffered more or less from constipation and pain in her bowels ever since. Sometime ago she noticed her motions were narrower than they used to be. Three weeks ago she had another attack of pain and vomiting. On admission, April 7, she is a spare, thin woman, abdomen distended with wind, painful on pressure and resonant. Peristaltic action of bowels well seen, coils of intestine mapped out and slowly moving and gurgling beneath the hand. Bowels not acted for some days. She vomits all the food soon after it is taken. The vomited matter is mixed with bile and apparently from upper end of jejunum. Ordered: pil opii gr. ½, ex. belladonnæ gr. ⅓, t d. Nutrient enema consisting of milk ½pt. eggs ii brandy ½oz. ice only to be taken by the mouth; warm water enema administered.

April 11—Bowels open for the first time to-day, vomiting ceased.

14. No return of vomiting; enema discontinued; has fish for dinner.

May 23—Patient went out to-day. She considers herself quite well. For the last week or two she has been on middle diet, going down stairs and helping about the ward, her only trouble being pain in the back after a motion.

June2—Patient states she continued well till three days ago when she was again seized with griping pains in bottom of ssomach and retching, bringing up bilious matters. She is in the same state as when admitted previously with distended abdomen and coils of intestine visible, returns to the nutrient enema and opium pills.

June 5—Bowels acted slightly after an enema.

June 8—Bowels well open, motions narrow, with fluid fœces, symptoms relieved.

June 16—Bowels not open since the 9th, pain and distention again with vomiting.

June 19—Bowels open for first time since the 9th, symptoms relieved.

July 3—Continues well, bowels regular, goes down into the park.

July 9—Again pain and nausea and old treatment again resorted to.

July 16—No relief, pain and sickness constant, a long tube passed up the rectum and warm water injected and a small lump of fœces came away.

July 25—Much in same condition, opium pills and morphia injections.

Aug. 1—Abdomen much distended, no action of the bowels. To relieve the distension Mr. Williams tapped the large intestine with fine trochar and cannula,

Aug. 3—Patient died early this morning.

P.M. There is a stricture measuring an inch and three quarters in circumference at the upper part of the rectum, there is an ulcer situated above and below. The stricture is apparetly due to cicatrization of the ulcer. There is no malignant

* See Bryant's Surgery, fig. 297, and p. 751.

growth. It is difficult to explain the cause of what was apparently a simple chronic ulcer, but when the tissue began slowly to contract, it caused first constipation, then the obstruction which was the cause of her death. There was no evidence of syphilis.

These cases well illustrate the difference between obstruction to small intestine and obstruction to large. Small intestine obstruction is characterised by sudden pain, early vomiting, fœcal vomiting, peritonitis, death within the sixth day. Large intestine, constipation, pain, nausea, finally vomiting, then perhaps a motion and temporary relief, to be followed by the symptoms over again. The small intestine is apparently more intolerant of a stoppage, but it must be remembered that the obstruction is generally sudden and complete, as in constriction by a band, while in large intestine it is gradually occluded by a growth or simple stricture.

Case No. I is a fairly typical case of one of the common cases of stoppage by a band.

No. II is a much rarer form of stoppage in an adult. Dr. Wilks says in his lectures on Pathological Anantomy that "I have never seen but one case of intussusception in an adult, and in this case the obstruction was never complete and death did not occur for some weeks," and in most of the cases on record a polypus was the cause of the intussusception, and the symptoms came on gradually.

Case No. III. was a tolerably typical case of malignant growth in the large intestine of which 75 per cent. are to the left of the median line. Rupture of the bowel is not the common form of death.

Case No. IV. illustrates obstruction to the large bowel from some slowly forming constricting band, either new growth or as it turned out cicatrizing ulcer.

The treatment carried out in all was 1st, no fluids by the mouth, ice to suck; 2nd, opium, perhaps combined with belladonna; 3rd, purgative enemata, and in the chronic cases the patient was supported by nutrient injections by the bowel.

DE MINIMIS CURANDUM.

The new cases in this, the second week of the series justify the title which has been chosen rather than the previous list could be said to do. No death; no case of any severity; nothing to cause any anxiety during the whole week. And yet, as a matter of mental effort, small maladies like those included in this list, cost the practitioner more than cases of a graver sort, simply because the causes of them are slighter, often denied or unacknowledged, have to be guessed at often, sometimes cannot even be guessed at, and it is not easy to treat them satisfactorily without first discovering their causes: while on the other hand the patients expect, very naturally, to be immediately *relieved*, and quickly to be *cured*. It is, therefore, sometimes necesary in order rapidly and successfully to cope with (say) a bronchial catarrh, to examine a patient's life-history. It is by patients justly regarded as a disadvantage in a new medical attendant that he does not "know their constitutions" (in other words, his original construction and the alterations which have been effected in it by means of gout, rheumatism, ague, anxiety, syphilis or dissipation), which may be learned in ten minutes, if only he will honestly answer plain questions. And if these be added to the recognition of these permanent taints (three or even four of which sometimes co-exist in one person) a knowledge of those causes which are likely to produce transient alterations in the patient—in other words, his general habits and mode of life—a knowledge of which can be similarly gained in a very short time, then the new practitioner is not, upon that head, inferior to the old. In certain acute cases, however, it must be owned that it is difficult or impossible to question the patient, while the friends cannot supply the required information.

The cases of the week were the following:—

1—Cartilage of ear cut through by fall (child)
2—Threatened delirium tremens
3—Menorrhagia
4—Thread-worms
5—Bronchial catarrh
6—Gouty Vertigo
8—Malarious
9—Urticaria
10—Diarrhœa
11—Pyrexia
12—Rash, supposed to be scarlet-fever
13—Scarlatina Anginosa
14—Midwifery (simple case)
15—Debility (child)
16—Fainting from heat of sun (boy)

No. 2. A builder, 58, a great drinker of beer, with shaking hands and trembling lips, great depression and fear of delirium tremens, soft pulse, white large tongue, yellowish complexion and conjunctiva, *but with bowels relaxed*, nausea and complete loss of appetite, begs for instant relief, which he gratefully acknowledges the following draught affords him:—Potass. Bromidi 10gr., Tr. Nucis Vomicæ 15m., Sp. Ammon. Comp. 30m., Sp. Chloroform 20m., Ess. Calumbæ 1dr. ex aq. He is therefore ordered to take it t. d.

No. 3. Most cases of menorrhagia or of past-partum hæmorrhage which occur in private practice are from debility only. The patients when first seen are generally very faint and are often in fear of death, while the attendants are in still greater fear. Ergot will control the bleeding, but it does not immediately cheer the patient—a thing of the first consequence to all concerned. This may be effected by a draught thus composed: Acid Sulphuric Dil. 20m., Sp. Chloroform 20m., Tinct. Ergotœ 15m, ex aq. fourth hour. After confinement Liq. Morph is often, or almost always, substituted for Ergot, the sulphuric acid being, in the dose indicated, a most efficient styptic.

No. 10. Many cases of simple diarrhœa, in which the intestines are empty of injurious solids, and the evacuations are merely watery mucus, as after too strong a dose of aperient medicine, or after a natural and otherwise curative purging caused by excess, but too long continued, are easily cured by Syr. Papaveris 1dr. ex aq.—one dose. It is also pleasant to the taste.

EVELINA HOSPITAL.

Mr. Paley has been appointed Registrar, and Messrs. Theed and Rowbotham have been appointed Clinical Assistants at this hospital.

MEDALLISTS AND PRIZEMEN 1873-74.

Examination of Students in Medicine and its allied Sciences, July, 1874.

THE TREASURER'S GOLD MEDAL FOR MEDICINE.

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THE TREASURER'S GOLD MEDAL FOR SURGERY.

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THIRD YEAR'S STUDENTS.

H. F. Lancaster, Southsea, Hants, First Prize, £40.
W. E. Snook, Colyton, Devonshire, Second Prize, £35.
H. Caddy, Ulverston, Lancashire, Certificate.
St. Clair B. Shadwell, Walthamstow, Certificate.
W. Cock, Redruth, Cornwall, Certificate.

SECOND YEAR'S STUDENTS.

John Brett, London
W. P. Reynolds, Dulwich } Equal, £32 10s. each.
R. Bevan, Redruth, Cornwall, Proxime Accessit, Certificate.
B. W. Gathergood, Torrington St, John, Lyme Regis, Certificate
J. B. Waterhouse, Isle of Wight, Certificate.

FIRST YEAR'S STUDENTS.

J. W. Meek, Macclesfield
H. Davy, Ottery St. Mary, Devon } Equal £27 10s. each
P. Horrocks, Farnworth, near Bolton, Lancashire, Third Prize, £10 10s. (Presented by one of the Governors).
J. T. Hinton, Croydon, Certificate.
J. Poland, Blackheath, Certificate.

UNIVERSITY OF LONDON.

PRELIMINARY SCIENTIFIC (M.B.) EXAMINATION.

The following Guy's men passed last month in the First Division—

T. H. Berry
B. F. Giles
E. B. Granger
C. H. Keep
G. Mackern
H. Manby
A. G. Maylard
J. O. Uhthoff
R. S. Wainewright

The following passed in the Second Division —

A. Burt
M. Lubbock
D. D. Roberts

FIRST M.B. EXAMINATION.

First Division—

R. E. Carrington

Second Division—

W. Kidd
C. J. Symonds

EXCLUDING PHYSIOLOGY.

First Division—

H. L. Champneys

Second Division.

A. W. Baker
A. Finch

Physiology only.

H. Duke
J. C. Ferrier

We understand that 41 gentlemen presented themselves at this examination, and that of this number 14 were rejected; 4 only were placed in the First Division.

The following questions formed the written part of the First M.B. :—

Monday, July 27—Morning, 10 to 1.

Anatomy.

Examiners,

G. W. Callender, Esq., F.R.S., and Professor G. Viner Ellis, F.R.C.S

1. Describe the osseous and ligamentous articulations between the occipital and other bones. Specify precisely the attachment of muscles to the bone; and state by what nerve or nerves each muscle is supplied.

2. Describe the dissection of the part of the Face within the following bounds :— Above, the upper edge of the zygoma with the fissure between the eyelids; and below, the base of the lower jaw. In front, the middle line of the body; and behind, the posterior border of the ascending ramus of the jaw. [The dissection is to be carried downwards to the bones and the underlying cavities.

3. Supposing the left Hipbone of the male pelvis removed, without the internal obturator muscle, what steps should be taken to show the muscles and ligaments closing the outlet of the pelvis.

State the position in relation to one another, and the extent, of each of those parts in the pelvic outlet : and their connections with the vessels, nerves, and excretory tubes, issuing from the pelvis.

4. Mention the length of each portion of the Urethra, and the position and the appearance of the different objects inside each portion. Describe the connections with parts around of the permanent curve of the urethra, and the use of the muscular structures around it.

5. Give the dissection necessary to lay bare from the origin to the ending the trunk and branches of the Gluteal Artery, and the superior Gluteal Nerve of the left side. With what vessels does the artery anastomose ?

[In the execution of the dissection the abdomen may be supposed open, with the contents undisturbed.]

Afternoon, 3 to 6.

1. Give a complete description of the right Palate bone. (The growth of the bone is not required.)

2. State the steps of the dissection required to show the course and the relations of the Radial Artery, from the line where it is crossed by the tendon of the extensor ossis metacarpi pollicis to its termination.

Name the branches of the vessel within the same limits.

3. How would you dissect the male Perinæum, commencing with the reflection of the skin, so as to show the triangular ligament. Give the relations of the structures met with, so far as they are exposed in the course of the dissection.

Describe the vessels and nerves laid bare.

4. Suppose a circular incision of the skin to be made round the arm, at the level of the point of insertion of the deltoid muscles, and a second incision to be made round the fore-arm one inch below the head of the radius; give the relations of the varions structures met with in dissecting, between those lines, to the periosteum and to the ligaments of the joints.

5 Describe the surfaces of the Heart, and the surfaces of the great vessels connected with it, so far as these are covered by the pericardium.

Tuesday, July 28—Morning, 10 to 1.

Physiology.

Examiners.

Dr. Michael Foster, F.R.S., and Prof. Rutherford, M.D., F.R.S.

1. Describe the minute structure of the Small Intestine. State what is definitely known regarding the actions on food of Bile, Pancreatic Juice, and Succus Entericus.

2. Give an account of the composition and properties of Haemoglobin. State exactly the evidence concerning the uses of Haemoglobin in the animal economy.

3. Give a general account of the minute structure of the Medula Oblongata. What functions have been determined by experiment to belong to the Medulla Oblongata?

4. Give an account of the developement of the Genito-urinary organs in the human male.

Afternoon, 3 to 6.

Examiners,

T. L. Brunton, Esq., M.D., D.Sc., and F. R. Fraser, Esq., M.D., F.R.S.E.

1. Describe the physiological action of Arsenious Acid. What officinal substances and preparations contain Arsenic, and what are the physical characters of each of them?

2. Describe the preparation, characters, and tests of Carbolic Acid. What are its physiological actions, medicinal uses, and official preparations?

3. How is Benzoic Acid prepared? For what therapeutic purposes, and in what doses, is it used, and what preparations are derived from it?

4. Describe the sources (botanical and geographical), composition, nature of purgative action, and purgative doses, of each of the following substances:—Gamboge, Castor-oil, Elaterium, Podophylline, and Aloes.

5. Describe the preparation, characters, and tests, of Sulphate of Zinc. What are its physiological actions, medicinal uses and doses?

6. Mention the sources (botanical and geographical) of Cascarilla. Describe its characters, and state its medicinal uses, officinal preparations, and doses.

Wednesday, July 29.—Morning, 10 to 1.

Organic Chemistry.

Examiners,

Prof. Debus, Ph. D., F.R.S., and Prof. Roscoe, B.A., F.R.S.

1. How would you determine whether a given substance is Inorganic or an Organic compound?

2. Describe how the Carbon and Hydrogen atoms are supposed to be united in Methylic, Ethylic, and Propylic Hydrides, respectively. Show how this hypothetical arrangement of the atoms explains that two succeeding members of the series C_nH_{2n+2} differ in composition by CH_2.

3. Give the formula of Crystallized Potassic Ferrocyanide. How would you prove Ferrocyanides to contain the metal iron?

4. Why is Ethylic Alcohol supposed to contain the radical Ethyl? How much Acetic Aldehyde, and how much Acetic Acid can theoretically be prepared from 23 grammes of Alcohol?

5. Describe the preparation of Lactic Acid from Propzlic Acid. Two equivalents of Hydroxyl are contained in one molecule of Lactic Acid; the hydrogen of one is easily exchanged for metals; the hydrogen of the other more easily for negative acid radicals. How is this difference in the behaviour of the hydrogen of the two hydroxyls explained? Is it necessary that every organic acid should contain the group COHO? Or can you name organic acids in which this group does not occur?

6. Describe the preparation of Sugar of Milk. Sugar of Milk at about 140°c and Cane-sugar have the same composition. How would you distinguish the two?

How would you ascertain whether a white powder consisted of starch or glycogen?

7. Why do you regard the Oil of Bitter Almonds to be the Aldehyde of Benzoic Acid? How is Oil of Bitter Almonds related to Benzole? How are the Carbon atoms supposed to be combined in Benzole?

8. A Solution is supposed to contain one of the Alkaloids. How would you discover whether such is or is not the case? If the Alkaloid was Morphia. how would test for it?

ROYAL COLLEGE OF SURGEONS.

The following Guy's men have passed their final examination and received the diploma of M.R.C.S.:—

On the 22nd ult.—

C. J. Davey
O. Gwatkin

On the 23rd ult.—

A. Carter
D. H. Forty

On the 24th ult.—

E. O. Giblin
E. Tyson

On the 27th ult.—

W. H. Harsant
C. E. Winckworth.

The following Guy's men passed their primary in Anatomy and Physiology on the 16th ult.:—

J. T. Brett
J. J. W. Grimwood
A. C. Parker
T. Richards

The following questions were given at the recent examination for the diploma of Member —

Medicine.

1. You are summoned to an adult patient in a state of coma, and of whom you have no history. How would you proceed to examine the case so as to determine its nature? What are the chief causes of coma?

2. What are the diseases with which enteric fever (typhoid) is liable to be confounded in its earliest stages? By what symptoms would you be guided to a diagnosis in doubtful cases? What symptoms would make your diagnosis certain? What are the chief sources and indications of danger in this disease?

3. Give the medical properties of the following preparations, and the doses in which you would use them—Tr. Digitalis, Zinci Sulphas, Ext. Belladonnæ, Ext. Ergotæ Liquidum, Ol. Terebinthinæ, Liq. Arsenicalis, Succus. Conii.

Surgery.

1. Describe the boundaries of Scarpa's triangle, and mention what tumours or swellings you may meet with in this region, and how you would distinguish them.

2. In what stages of their course may burns prove fatal? State what are the causes of death in each stage.

3. What are the causes and symptoms of perineal abscess? How would you treat such a case, and what consequences may result from its neglect.

4. What injuries are likely to result from a violent fall on the palm of the hand, with the arm raised and extended? Explain the mechanical mode in which such injuries are produced.

5. Describe the operation of placing a ligature on the brachial artery in the middle of the arm; and state by what vessels the circulation is re-established collaterally, and how the separation of the ligature is effected.

6. Describe, in their respective relations to each other, the various parts which must be divided in circular amputation of the leg, where the bones are sawn through immediately below the tubercle of the tibia.

COMMUNICATIONS RECEIVED.

Mr. T. Stephens, Mr. T. Churton, Mr. R. C. Holmau, Mr. J. Larkin, Mr. W. H. Aldersey.

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6—A Case of Diabetic Coma, treated withpartial success by the injection of a Saline Solution into the Blood. C Hilton Fagge, M.D
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24—Statistical Account of Patients treated in Guy's Hospital during 1873 By J. C. Steel, M.D
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Guy's Hospital Gazette.

VOL. IV.—NO. 18. SATURDAY, SEPTEMBER 5, 1874. TWOPENCE

LONDON UNIVERSITY EXAMINATIONS.

THE University Summer Examinations are over, and we have to congratulate a tolerably long list of men who figure, if they do not all shine in the pass lists. The first division this year in the Preliminary Scientfic Examination shows a marked improvement on most recent years, and on comparing our passes with those of other medical schools, we have every reason to be satisfied with our success. It reflects credit alike on students and teachers, and is evidence of good men entering on, we hope, a distinguished hospital career. With the Honours list we can hardly congratulate either examiners or candidates. What sort of a standard have they set up in Botany that no one should figure higher than a third class? And what in the other subjects, that with a single exception, no one is classed higher than second or third? Are all the men and all the teachers of the various schools at fault this year, or were the examiners in a more than usually austere mood?

The First M.B. list is of a decidedly variegated nature. We must heartily congratulate those gentlemen who faced the whole undivided examination, and the single one who again ran away from his comrades, and entered the golden lists. For the remainder we have qualified praise. It is pleasant enough for them to have the last or major part of their examination over, but we confess to a dislike for doing things by halves. There is no doubt whatever that the Physiological part of the examination, theoretical and practical, is one of the most trying ordeals for our men. The difficulties have increased of recent years. Year by year physiology is making strides out of all proportion to its sister sciences, and the University is laudably endeavouring to keep its standard abreast of the times. But do the men know their physiology any better by taking it alone? Look at the pass lists. It is the exception for men to get more than a second class in Physiology alone, and they do not fare much better in the other half. Robbed of all emulation in competing for honours, they simply aim for a pass, perhaps busying themselves with other work, and too often disappoint themselves and those who have neither spared time or trouble in working them thoroughly up for their examination. We believe it is a mistake, for all parties concerned, to split the examination into two, and we hope the University authorities at no distant date will require every student to take up all the subjects at the same examination.

Whilst thus finding fault, we may express our opinion that the Senate have done wisely in not modifying the Preliminary Scientific, but preserving it unaltered in spite of some recent clamour. A session or two ago, a surgeon of a distinguished medical school raised the cry which was echoed by the feebler portion of the medical press, that the scientific portion of the M.B. examination was difficult, out of all proportion to its usefulness. It was said that thermal units and relative conductivity had but small bearing on Practical Medicine—that man was not a steam-engine or his brain a battery. Along side of all this there has been a gathering cry that we are getting too scientific, that amidst the reign of "scopes," and the *éclat* of physiological and pathological discovery we are losing sight of the "vital force" and the "phenomena of life," which underlie, move, and direct, the complex anatomical machinery of brain, artery, and nerve. That we are leaning too much on physical forces, and ignoring the emotional side of man's nature. They would tell us as in days of old to "take your hydrogen atoms,

your dead carbon atoms," and "all the other atoms, dead as grains of shot of which the brain is formed," and then out of their combination to explain "how out of that mechanical act and from these individually dead atoms, sensation, thought, emotion, are to arise." Doubtless we must lower our heads, and confess our ignorance on much that relates to the emotional part of man. It is one thing to confess our ignorance, and another to say that all this lies far outside the circle of physical enquiry. "Science is extremely bad at dealing with the unknown," but surely she is narrowing its boundary every day. It is but a wave of the old tempest which raged in time gone by. But we should read but blindly the lessons of the past, and profit but little by the lives of the "great men of old, who have gone into the grave with the weapons of war," if we did not with the same faith in physical laws, and the same zeal in the observation of Nature, push our enquiries into the farthest limits of the unknown.

We sincerely hope the University will ever maintain in its medical degree a conspicuous place for pure science.

THE METROPOLITAN HOSPITAL SUNDAY FUND

This fund, which at first seemed likely to fall short in amount of that collected last year, has gradually swelled to £29,500; and the committee appointed to distribute it have recently made public the result of their deliberations. Guy's, St. Bartholomew's and St. Thomas's Hospitals, being largely endowed, gain nothing by this movement, but their students will nevertheless watch jealously the distribution of a fund which under bad management might become an encouragement to quackery, and an endowment of the worst practises of the profession. On scanning a list of hospitals and dispensaries which have received assistance from the Mansion House Fund, we are convinced that the committee have, for the most part, portioned out the several donations with discretion. Nor do we wish to advocate the claims of any of those institutions overlooked by the committee, for here again we are satisfied that wisdom has been shown in the omissions. Of the hospitals connected with medical colleges the London rightly carries off the lion's share, receiving £3,812; St. George's comes next with £3,050; Middlesex third with £2,287; King's, St. Mary's, University College, and Westminster each receive upwards of £1,000; then come a number of well-recognized and valuable institutions, among which are distributed many hundreds of pounds, and finally donations of smaller sums to charities, some meritorious, others of somewhat questionable utility. There is one conspicuous error, however, in this distribution, to which we can but call attention. On glancing a second time through the list we were surprised to discover that £114 had been presented to the *London Homœopathic Hospital*. Surely the Committee must have mis-read the name of this place, and cannot wantonly have thrown away so large a sum upon such diminutive and useless objects as homœopathic globules. Or perhaps, we misunderstood the nature of this institution, which may be a hospital for the reception of those who have been left uncured by Homœopathy, in which case we think a much larger sum granted would not have been misplaced.

NOTES OF THE ABERDEEN MEDICAL SCHOOL.

Till the last few years there existed two medical colleges, Marischal and King's, in the town of 90,000 inhabitants. Both were poverty-striken—wanting money, students, and able professors. Both granted degrees. A few years since they were amalgamated. Marischal College is devoted to the medical section, and King's College to the arts portion of the university. Marischal College is handsomely built, like the rest of Aberdeen, of granite. Its natural history museum is excellent, a large lofty hall, well-stocked with carefully prepared specimens. The collections of botany, jurisprudence, and pathology (the latter at the hospital), barely deserve the title—museum. Only at rare intervals are these tiny museums available to students, the respective professors jealously guarding their bantlings; thus students are almost wholly deprived of even these trivial collections. The library contains many thousand volumes, but all are old. New books are almost as rare as angels' visits. It would be wholly impossible for any student to work up any special subject by the aid of this library. It is only open for three hours daily.

Till the advent of Professor Struthers, no anatomical museum existed. This professor, a man of unbounded energy, possesses a thorough knowledge of his branch, and is the great light of this northern school. A strong advocate of the Doctrine of Evolution, he has been attacked by the clergy in the mild and loving manner in which theologians always assault those who dissent from their legend-founded beliefs. Directly Professor Struthers arrived he began the work of reformation. He began the present anatomical museum, he has worked hard and long, has had a fine lecture theatre and museum built; the latter part growing in size and efficiency, contains many beautiful and rare specimens.

His energy stirred slightly his slothful colleagues to begin museums, but their work has been done listlessly and tardily.

By his teaching he has greatly attracted students, whose number, now 250, is yearly increasing. He teaches anatomy as a science. The writer was taught anatomy by a man who asserted that "anatomy is not a science, because I know my way about the human body, just as my coachman knows his way about town." As he knew and taught anatomy it certainly was not a science, but listen to a lecture by our learned professor, and then deny, if possible, the claim of anatomy to a place among the sciences. Whilst lecturing, he brings forth his vast knowledge of comparative anatomy, and his general scientific attainments. He explains fully and clearly the *reason of things*. He shows that all the parts are derived from some ancestral form, or are modifications of it. For example, he demonstrates the development of an arm; beginning at the lowest point where an arm is found; he traces its development upwards, explains the general principle on which arms are built; shows the correlation between fins, wings, forelegs, and arms, points out which structures are developments, which rudiments, and how most variations are but reversions to an older form. He clothes the dead bones of anatomy with living interest, and sheds vast floods of light on the subject, enabling the student to grasp and understand the whole topic as he never could by ordinary teaching and the stock text-books. Spite of his careful teaching, the dissections in Aberdeen are scarce worthy of the name. Almost without exception the parts are uncleaned, look dirty and are slovenly done. A really good clean dissection is rare.

About the other lectures, except those on surgery and botany, the less said the better. The lecturers are the great blot on the school. These men are behind the age; all *read* their lectures in level, monotonous, indistinct tones, never arising their eyes, never truly demonstrating.

When appointed these men wrote out their lectures, and though twenty, thirty, and even forty years have elapsed, and whole revolutions have taken place in their respective branches, like Rip Van Winkle they have slumbered soundly through them. These men cannot be hurried out, their salaries are secure, and they laugh at all ideas of progress. When the lord rector, Professor Huxley, tried to institute a few feeble reforms, these lecturers fought him tooth and nail with the weapon "vested interests."

What do they care for improvements in the school? Changes in the school do not pay their house rents.

Their pronunciation is very uncouth, often rendering passages unintelligible to civilized ears. Thus, "I have h(e)ārd that the wĭdth of the pīson (*sic*) gland in snakes is, &c." The parĭēētal bones of tŏŏds. *Rigors* converted into "*riggers*." A fever patient is *no able for his meat*. Virchow was, in five minutes, by the same lecturer, called Vircoo, Virshow, Vircow, and Virco.

Bleeding is recommended in phthisis. Serous apoplexy was held to be one of the commonest forms.

The pathology taught in lectures was most interesting, as it enabled one to contrast the knowledge of thirty years ago with that now existing.

Is not this startling advice to give? "If you are called to a patient with vomiting, and constipation, and abdominal pain, and collapse, you should not at once proceed to feel his femoral rings for hernia, but treat him first for colic; if this does not answer soon, *then you may seek for hernia*, but it is not nice to be always feeling peoples' groins." Nothing was said to modify this statement. Does it not remind one of the prudent old gentleman who declined to operate on a case of strangulated hernia—till the vomiting stopped.

The lecturers on midwifery and medicine hold no hospital appointment.

At each lecture there is a roll call. Immense importance is attached to attendance on lectures, and it certainly is advisable to attend regularly, as the lecturers are also examiners.

The students take notes most diligently; many lectures are drawlingly delivered that every word may be copied.

Many read nothing beyond these notes. When examined, if questions be asked, the answers to which are in their notes, they feel at home, but, woe betide them should the extra examiner ask them questions! Complete notes of lectures fetch high prices. By this means students' minds are crammed with professional fads, but know nothing practically except anatomy.

Lectures on each subject delivered five times weekly. Saturday the only free day.

The teaching of all the subjects first learnt by a student, as anatomy, botany, zoology, chemistry, and materia medica, is passably good. To this point all is well. After follows the bad. Only one course of lectures on surgery, medicine, midwifery, and physiology is attended. Only *six* cases of midwifery need be attended. The majority of students do not begin to attend the medical wards till the last winter, they wander listlessly round the wards, rarely attending to the clinical teacher, get almost by heart their miserable notes——and graduate. Before the clinical portion of the examination, students visit the wards, learn up the forty medical cases, with the physician's (examiner's) diagnosis prognosis, and treatment of the case on one day. On the next, the examiners take him to the bedside and leave him to diagnose, a few moments suffices: he gives the examiners back their own full and complete opinions on three cases. He is then shown a fourth case, and is given unlimited time to write a report and comment. By a little ingenuity he may, if he pleases, take it home, consult authorities, and return *it next morning* to the *nurse*. What wonder that "fellows are rarely plucked in their clinicals.!"

Clinical teaching can hardly be said to exist, two physicians and two surgeons alone doing a little work. Neither surgical nor medical registrar exists. The house-surgeon and house-physician are unqualified students, merely holding the appointment because their father's friends are town councillors. One physician mutters wholly inaudible questions to his patients, but declines to discuss their ailments. Students are rarely allowed to enter the female lock wards, and know very little about these cases. "Diseases of women" are mixed with medical cases, and are examined in private rooms, from which students are almost wholly excluded. Of these cases they know nothing whatever. Once Dr.—— showed the students an os uteri through a speculum. This caused great wonder and awe among the students, who with eager voices asked the writer so tediously often, "Have you ever seen an os uteri?"

The out-patient department is wretchedly managed. Of medicine, and insanity, and gynæcology, and aural, and dental surgery, and hygiene it may be said they know almost nothing.

The students are a rough, unkempt set, but are real good fellows. They work hard, listen eagerly to lectures, and, as a rule, pass their examinations in good time. Their minds are well-trained, act slowly, but surely and clearly. They are thoughtful; retentive of knowledge, though slow in acquiring it, and *think* more than most other students. As a body they are studious and have few vices—drunkenness excepted.

A CASE OF EPILEPTIC MANIA.

By Henry Ashby.

F. G. P., æt. 34, was admitted to Guy's in August, 1874, under Dr. Taylor. He was found lying in the streets near Billingsgate, and was brought in a comatose condition to the hospital. His pupils were contracted, insensible to light, and he could not be roused. A few hours after he was sick and more sensible, but confused. On the following day he was well enough to give an account of himself. He said that his mother, though never an inmate of an asylum, was latterly strange in her manner at times, and looked upon as not quite right · one of her brothers and one of his own brothers were also strange. He had been subject to fits all his life. but they had been more severe during the last two years He is a tutor by profession, and has followed hisemploy. ment successfully. About two years prior to one of his fits he distinctly saw a number of soldiers with rifles and commanded by officers drawn up to execute him. He could hear their voices, and distinguish the details of their dress. This continued for about an hour before he became unconscious. On five separate occasions before fits he has had the same delusions. He positively states that no effort of his mind guided by past experience can expel the delusions, and that at the time he is perfectly certain of their reality. After losing his consciousness he often walks about in an apparently rational manner before falling down and becoming convulsed. On the present occasion he was coming up the river from Boulogne, and remembered nothing after passing Gravesend, but appears to have conducted himself rationally until he fell down in the street in Billingsgate. A few months ago he went to Paris with an idea of perfecting himself in the French language, and supporting himself meanwhile by teaching English. Having the misfortune to lose what means he possessed, he wandered about the city for several days and nights, and the exhaustion which ensued seems to be the exciting cause of an attack of acute mania. He wrote an account of himself during that period, which is of interest as giving a vivid picture of the reality of the delusions of an excited brain :—

"I arrived in Paris the first Sunday in June. Robbed the same evening of the greater portion of my money. Continued walking (occasionally resting on a bench) until Thursday evening when I gave myself up to the police. On Wednesday afternoon I fancied that persons in the streets were calling after me, every one speaking English. I became very excited and took refuge in one of the public gardens, where I lay for some considerable time under the shade of the trees. There I imagined a conversation between several persons relative to my intended destruction by some soldiers in the ensuing evening or night. I passed a most fearful night, running from street to street, being pursued by omnibuses full of armed men. Towards morning the hallucination gradually dispersed and left me pretty quiet for an hour or two. I was not permitted to remain in peace for a longer duration than this ; passing down the side of the Seine I was met by a young soldier who made a thrust at me with with a sword-bayonet. I cleared out of his way and continued my walk by the river. Now the most frightful scene appears before my eyes : I am rivetted to the spot, I dare not move a limb, am ordered to immediate execution by hundreds and thousands of voices. The barges on the Seine are filled with spectators and bands of musicians playing funeral marches. One vessel was decked out with all my funeral paraphernalia and the men that were to be my executioners. All the people I had ever known in my life appeared before me. I expected to fall at every moment. The bullets cracked and cracked. I could feel them hit me. At last I felt a hand upon my arm, and turning round perceived a policeman who asked me to pick up my umbrella. I could not be persuaded for some little time to alter my position but remained where I was till, if I rightly remember, I nearly fainted and walked off and sat myself down on the first beuch I could find. What passed for two or three hours my memory does not serve me to relate, but I found myself racing through one of the environs pursued by dozens of armed soldiers. My strength must now have entirely forsaken me. I entered a small café, and sat myself down. There I remained some little time till at last I was escorted by two officers to the Commissariat of the Police. I suffered a great deal there from the excited mob which I imagined to be on the side of the office. From this place I was escorted to some other station of the police, and afterwards taken in some conveyance to the Prêfecture, where they locked me up in a small chamber for about twenty-four hours, after which I went to St. Anne. What I imagined in this chamber surpasses description. I fought nearly the whole time bathed in perspiration until I suppose I wore myself out and fainted. At St. Anne I was very ill and put to bed in a straight waistcoat, secured firmly to the bed. There were three other persons in the same room, but could count no less than from thirty to forty. These men, I believed, had followed me for the purpose of taking me off to a place of execution. I remained delirious for four or five days. (I had not tasted intoxicating drinks of any kind for several days). At St. Anne I believed myself in my uncle's house, and he all the time was bribing them to spare my life. I applied to the doctor for an indulgence from Rome, and this I believsd to have arrived, and I was free to return to England. I left St. Anne in pretty good health, and with five others was taken to the Asile de Ville Evrard. It is a large place and very beautiful, capable of accommodating 250 men and as many women, divided and sub-divided to suit the character of the different patients. I was very tranquil all the time, and inhabited the best *cartièmse*. I have suffered from these visitations some three or four times. I am frequently lifted and thrown with great weight from one side of the bed to the other. I believe firmly in the possession of evil spirits, the same that are frequently alluded to in the Gospels of our Lord. These disastrous occurrences have almost brought me to ruin.—F. G. P., Aug. 20, 1874."

A few days after, thinking we were rather too interested in him, the patient took himself off suddenly.

CORRESPONDENCE.

[We do not hold ourselves responsble for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—Some weeks ago several gentlemen went the round of the Hospital, collecting money for the late Janitor, for the avowed purpose of putting him into a shop near Guy's, in the hope that he might be able to make a good thing of

it. Your humble servant was dubbed to the extent of five shillings for that purpose. Now, the Janitor's face has quite disappeared from the Hospital, and has not reappeared, as far as I know, in a neighbouring shop, neither have I seen any notice from the gentlemen who undertook to collect the money.

Would it not be wise to utilise the columns of your *Gazette* to inform subscribers as to the amount raised and the quarter where the money was finally landed?

Personally, I should be both sorry and annoyed if money raised for a definite purpose should be wasted in dribbles or invested in beer-engines.—Yours, &c.,

NON-CIRRHOSIS.

To the Editor.

Sir,—I send you the following account of an adventure which has just happened to me, to put externs on their guard, as well as because it is curious as illustrating what extraordinary proportions a tale may assume in the mouths of ignorant people.

I attended a "case" on July 21st, in Vint court, Mint street, a filthy little place. The presentation was a "face" and the labour, in consequence, tedious and difficult; the chin was born first, and there remained for more than three-quarters of an hour. Foreseeing a difficulty, I sent a note to Mr. Hicks, the Junior in the Charity, for assistance; he very kindly came, and remained from 11 p.m. until 2 a.m., when the child was born, delivering the woman himself, and leaving me nothing to do but tie the cord, and remove the placenta, when we both returned to the hospital together. I visited the woman every day, and Mr. Hicks also visited the child twice before its death, which occurred nine days after its birth. The child soon developed symptoms of acute inflammation of the pharynx, breathed with great difficulty, and could take no food, and, although I tried every means recommended by Mr. Hicks, in nine days it died. The woman was in extreme poverty, and quite friendless, and asked my advice as to the disposal of the body. Being no lawyer, and unaware that it was illegal to remove a dead child which has once breathed without registering its death, I recommended its removal to the hospital, hoping that since during its little life it had been so useless, it might prove of use to Dr. Hicks, at his lectures, now that it was dead. She had no one to do this, and, therefore I carried it to the hospital myself. Three days afterwards, a constable came to the hospital to make enquiries, and Mr. Hicks gave him a certificate of death, and I, at his recommendation, took the dead body. However, next day, Dr. Galabin and Mr. Hicks were summoned to attend a coroner's inquest, and make a post-mortem examination, and I, too, was summoned to give evidence. We attended in due course, were all examined in form, and when the Coroner summed up, to my intense astonishment, he made the following statement. That a letter had been sent to him, stating that the woman had been delivered by a student alone, that he had used instruments, which had crushed the child's head, that he had neglected the woman and her sick child, and that on the death of the child, he had, to screen himself, and avoid exposure, removed by stealth the victim of his ignorance, to bury it in some corner, known only to himself. However, luckily, in the evidence it came out, that Mr. Hicks delivered the child himself, that he had been called in afterwards by me twice to see the child, that the child's head was not crushed, and that I had visited the woman and child every day, and Dr. Galabin's post-mortem left no doubt of the cause of death. Of course, the jury gave a verdict of death from natural causes, and entirely exonerated me from blame. I had a little chaff with Mr. Hicks, for he had been irate with me, for calling him in to a face presentation, but which was a most fortunate circumstance for me. Mr. Payne, the coroner, behaved with great courtesy and politeness, and if ever I attend another inquest, I hope he will be chairman again.—Yours, &c.,

THOMAS DUKE.

DE MINIMIS CURANDUM.

THIRD WEEK.

1—Acute rheumatism
2—Sub-acute gastro-enteritis (purging and vomiting)
3—Constipation (post-partum)
4—Pyrexia (child, non-digestion, blood-poisoning)
5—Nose bitten by a man
6—Injured leg
7—Pre-partum hæmorrhage—Mitral disease—dropsy
8, 13, 20—Neuralgia
9—Ague
10, 11, 12—Diarrhœa
14—Cholera (*i.e.*, purging, vomiting, colic, cramps)
15—Menorrhagia
16—Vomiting, febrile (child)
17—Ulcer on palate (child)
18—Effects of overdose of beer (child)
19—Stone embedded in cornea
21—Femoral hernia (woman)
22—Pyrexia
23—Asthma and bronchitis (boy)
24—Debility (blood poisoned by sewer gas)
25—Deafness—wax in ears
26—Otorrhœa—pyrexia—vomiting—cerebral symptoms—rigors—death

No. 1—Some success has been obtained in the treatment of rheumatic fever by the following method:—The remains of all food which has been eaten before the attack are removed by a black draught or other aperient, and the patient is afterwards seen or heard from twice daily until he finds that the medicine then given relieves him and agrees with him perfectly; for I have found as a rule that if a drug or medicine does good *at all*, it does it *at once*. And I tell the patient at the outset that he is not to rest contented until he is sure the medicine is doing him good. This plan seems to eliminate *imagination* from the treatment. In the present case Mist. Sen næ Comp. 1 oz., Tr. Belladonnæ 5 m., was given every four hours, as long as required. After this alkalis. It was a bad case, many joints affected, and there were cardiac murmurs—I did not trouble much what, but put a blister on the precordia as a safeguard. The cause of the attack was clear—flannels had been worn for five years after a former attack; they had lately been discarded during some very hot days, and had not been resumed when the wind changed to NE. Pre-eminently a simple case; age of patient, 22; no other apparent disease; a married woman; one healthy child; house well-found; surroundings good. *Pulse full, soft.* No cardiac debility; no sickness. The tongue was *quite clean*, rather fim, red and smooth—something like a scarlet-fever tongue without the enlarged

fungiform papillæ. The alkalis utterly failed. The pains and murmurs shifted about, but their total sum did not decline; the sleeplessness and sweats continued; and the patient became tired and dejected; the breathing was hurried, especially upon slight exertion. On the eighth or ninth day was given what ought to have been given on the second or third—quinine. Quinine simply—not in solution, but in plain water—one grain every four hours. In private practice the manner of giving a drug seems to make an immense difference; it is astonishing what an apparent trifle makes a right drug seem wrong. This, however, was the right drug in the right way, and at the right time—in three days the patient was out of bed, and in six out of doors, so that the entire treatment, after all, only occupied a little more than a fortnight. But yet it was not a satisfactory case; it was nothing to boast of, seeing that we had all our own way and that when the hour and the drug arrived, the cure only took six days. Of course it may be said that quinine would not have done as well at first; but I could describe a remarkable case, if space allowed, to show that it may be given sometimes from the very first. I have noticed, as a clinical fact, which I cannot at present explain, that when the tongue shows as above described, quinine can be given, let the other indications be what the may. However, in this instance there were present other indications for the use of quinine, but they were overlooked. The soft full pulse showed a want of arterial strength; so did the profuse perspiration. But it is often difficult, as it was in this very case, to keep's one's mind clear and cool to weight and estimate the meaning of signs when anxious, nervous, and fidgety relatives crowd about you and give no peace.

Diet.—Many a battle must the practitioner fight with such anxious people upon the subject of diet. They will persist in feeding the patient beyond all reason. Many an invalid lying in bed, doing nothing of mental or bodily work, who cannot grow in height or otherwise, and who cannot store food for future use, has more food given to him than a hard-working man requires or takes. What can possibly become of all this food? Where can it go? It has to be carried away by aperients. I was attending a patient with gout, and nothing would give him sleep at night. At last, I directed that instead of his usual oatmeal gruel at bedtime, he should take arrowroot with water, he immediately slept well, without drugs. In another case, a butcher's wife, with gout and rheumatism, consumed every day the beef-tea resulting from a pound or more of rump-steak, besides much food of other kinds. She made no progress, but got much worse, until very free purgation was used, and the diet restricted to what they though starvation.

MEDICAL WARDS.

—o—

The following new cases have been admitted.

JOHN (Clinical).

7—Enterica
8—Enterica
9—Facial Erysipelas
14—Hæmaturia—Malignant—Dislocation of Kidney
15—Epilepsy—Mania
16—Dyspepsia

MIRIAM,

22—Cerebral Tumour
24—Enterica
26—Gastritis Ulcer (?)
27—Febricular
28—Cynanche Tonsillar
29—Mitral Stenosis—Ascites
32—Bronchitis

STEPHEN.

4—Mitral Regurgitation—Pneumonia
7—Ascties—Cirrhosis of Liver (?)
8—Albuminuria—Phthisis
20—Acute Rheumatism
23—Cardiac Dropsy—Mitral
26—Dyspepsia
37—Erysipelas Facial—Albuminuria
39—Hœmoptysis—Phthisis

MARY.

4—Constipation
6—Acute Rheumatism
14—Chronic Rheumatism—Bronchitis
20—Acute Rheumatism

ADDISON.

2—Typhoid
3—Rheumatism
10—Chorea
25—Epilepsy
26—Morbus Cordis
27—Spinal Curvature
85—Mitral Regurgitation
36—Asthma
37—Hysteria, spinal
38—Right Hemiplegia (Epilepsy)
39—Acute Rheumatism

PHILIP.

12—Sciatica
15—Mitral Regurgitation
31—Aortic Valve Incompetence
37—Mitral Regurgitation
38—Diabetes (?)
41—Erysipelas of Face

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26—List of Prizemen and Medallists
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Guy's Hospital Gazette.

VOL. IV.—NO. 19. SATURDAY, SEPTEMBER 26, 1874. TWOPENCE

THE FUTURE OF THE GAZETTE.

ON the 1st of October the *Guy's Hospital Gazette* will appear under new management. Mr. BRIMMER, the printer, who has for some time past been also the proprietor of the journal, has made over his interests in the paper to the Presidents of the Physical Society, by whom in future it will be conducted.

It is the intention of the future Editors to publish in the *Gazette* a trustworthy account of all hospital news, together with a weekly report of the operations, and notes of the various special departments in the hospital. They also hope to furnish their readers with notes of lectures on various subjects delivered by Members of the Staff, and carefully prepared reports of the most interesting cases in the Wards.

Any profits that may arise from the circulation of the journal, and from advertisements, will be directed to the foundation of scholarships and prizes in connection with the Society, of which the Editors are Presidents. All sums hitherto unpaid, for back numbers of the *Gazette*, as well as subscriptions for the ensuing three months, will be received by the new Editors, and should be made payable to Mr. F. C. JOSEPH, Guy's Hospital.

NOT very many years ago, when Subjects were less numerous than they are at present, and the time allowed for dissection was limited to the winter session, the more ambitious students were often exercised in their ingenuity to discover some means by which their hours of toil might be prolonged and their labours rendered more effective. At that time, the Dissecting-room Porter was a man whose heart was not proof against the seductive influence of a silver key; and on rare occasions, when the sun had set and the hospital was deserted, he would return with some hard-working student, and after supplying him with a rush-light or cotton candle, according to the liberality of his fee, leave him alone with the dead to continue his dissections in the still hours of night. The picture of a student thus employed, with his face lit up by the rays of his tallow dip, and all around him half-dissected bodies poised in various attitudes, would have formed a theme worthy of a Rembrandt's pencil, and sensational enough for our modern Gallait. We a little wonder what would be the effect of such a scene upon the sensitive temperaments of those persons who term themselves Spiritualists. Doubtless, every decomposing carcase would become re-inhabited, and our student, were he a medium, would become informed of the secrets of half the Universe, not omitting that very important one of which his informants would have had some experience, the best method of injecting and preserving dead bodies. On one occasion an accident occurred, which almost disturbed the equilibrium of a student, who was not much given to indulge in superstitious beliefs. When deeply engaged in dissecting the thorax, and with his mind tensely strung in an endeavour to unravel the mysteries of the cardiac plexuses of the sympathetic, he was suddenly aroused by a violent thump on the table behind him, and starting round he saw a bowel-less body turn slowly on its side and drop heavily upon the floor. How would a spiritualist have explained such a

phenomenon ? He would probably have conjectured that a departed spirit, in order to show its disapproval of dissection by night, had re-entered its mortal dwelling-place and brought about the movements he had observed. The irregularity of these he would have attributed to the injury already done to important muscles and nerves ; and his terrified consciousness, distorted by his own marvellous conception, would have projected to his ears the sound of voices and rustling of wings, as certainly as one becomes conscious of brilliant flashes of light when the eyeball has been subjected to a sudden contusion. Horrified by his own illusions, he would have relinquished his toil in obedience to the presumed injunction of his familiar spirit, and hurrying home would have set himself to work to prepare a paper on the " manifestation," to be read at the next Annual Conference of Spiritualists.

Happily, our student was not a Spiritualist, and immediately upon recovering from his first fright, he set himself to discover the cause of the movements. He soon found that a cord used to suspend one of the limbs of the corpse had given way, and the member thus suddenly released had fallen by the side of the table, and so disturbed the equilibrium of the body as to cause it to roll over on to the floor.

We feel it almost puerile to contend, that the so-called " manifestations" related at the recent Conference of Spiritualists, if with any foundation in fact, are not without a rational interpretation as sound as that of the accident narrated. Some indeed of the manfestations were so amusing, that nothing but a strong Spirit of Order could have prevented the audience from bursting into roars of laughter. The President himself commenced the fun by stating that, in his house Spirits made the beds, removed articles from one room to another, and walked up and down stairs " with a tread as heavy as that of an ordinary man." One member said that " voices had been heard by him for twenty years, though they were inaudible to other persons." This we can quite imagine. Another declared that " a little boy employed in a coal mine near Glasgow was in the habit, when tired, of calling upon a spirit to help him to push his truck, which it generally did. On one occasion the spirit, it is said, used such violence as to damage the truck considerably." What a naughty spirit ! We trust the little boy was not punished for damage done by this well-meaning but unfortunate spirit. But the most ingenious spirit, yet discovered, is one that " manufactured pills, which were afterwards taken with marked benefit by a lady." Surely this is a spirit to be cultivated by all the over-worked members of our profession who dispense their own medicines. It is difficult to feel angry with such pretty ghost stories as these ; yet we can but express our greatest contempt for those persons who would persuade others to believe in them. Hitherto we have thought that the public looked to our profession to protect them against these gross fallacies in belief, which shake the bulwarks of true Religion. It is, therefore, somewhat humiliating to find, that the President of this conference was an M.D. Edin., though, we are happy to say, " retired."

STRAY NOTES.

M. Girolamo Ponti, a wealthy native of Milan, has left a legacy of about £35,000 to the " Academies of Science of London, Paris, and Vienna." The two latter cities possess institutions known as Academies of Science, and to these, no doubt, a fair proportion of the legacy may be given over without causing any contention. In London, however, the case is different, for there is no Academy of Science, so-called ; and it is possible that a number of different Societies may lay claim to the bounty. For our part we were of opinion that the Royal Society would have a right to the whole ; but should there be any doubt in the matter, we think no Institution would be so well qualified as the University of London, to distribute in prizes the proceeds of this munificent gift.

A death from hydrophobia took place within the hospital on the 16th inst. The child, Amelia Andrews, fell a victim to the rabid dog, which a few months ago ran through Walworth and Camberwell, snapping at every passer-by. No less than twelve persons were bitten at that time, but we believe this is the only case in which hydrophobia has supervened. It will be remembered that the rabid animal was gallantly despatched by Police-constable Wells, who pursued it in a cab, and after chasing it for a mile, succeeded in killing it with his truncheon near Camberwell Gate. A full report of this case will appear in our next issus.

We regret to announce that Mr. Bransby Francis, who was formerly a student at this hospital, has succumbed to the injuries received in the railway accident at Thorpe. Besides a fracture of the thigh-bone, he had sustained a severe injury to the chest, causing fracture of five ribs, and his case from the first was almost hopeless. Mr. Francis acted as secretary to the Excursion Committee at the late meeting of the British Medical Association, and was much respected.

Two appointments at the hospital, which were recently vacant, have been filled from the old Army List. Our new

Janitor, we understand, was formerly a corporal in the Second Life Guards. The new Injector, also a corporal, served twenty-one years in the Line, and was afterwards employed for fourteen years in the Convict Service.

Mr. Williams has been appointed Clinical Assistant at the Evelina Hospital for Sick Children.

A late dresser in the Eye Wards, writes to inform us that ophthalmoscopists are the only real sight-seers.

MEDICAL WARDS.

The following new cases have been admitted.

JOHN (Clinical).

9—Tetanus—Death
9—Hydatid of Liver (?)
15—Immersion

MIRIAM.

17—Hydrophobia
23—Scarlet Fever
30—Immersion
34—Diptheritic Croup—Tracheotomy

PHILIP.

16—Rheumatism
17—Paraplegia
18—Morbis Cordis
28—Rheumatism (?)
35—Rheumatism
49—Rheumatism

STEPHEN.

1—Phthisis
5—Phthisis
6—Phthisis—Albuminuria
7—Regurgitation of Food
8—Acute Rheumatism
12—Diabetes
14—Chronic Rheumatism
15—Diarrhœa
16—Aortic Disease
17—Cardiac Dropsy
18—Phthisis
19—Subacute Rheumatism
21—Chronic Bronchitis
22—Facial Erysipelas
25—Cirrhosis of Liver
27—Cirrhosis of Liver
28—Abscess (Perinephritic)
31—Facial Erysipelas
35—Acute Rheumatism
36—Malignant Disease of Rectum
37—Acute Rheumatism
40—Acute Rheumatism
42—Malingering (?)
43—Sciatica
49—Acute Rheumatism

MARY.

2—Paralysis (partial) of Upper Exttremity
4—Rheumatic Fever
6—Acute Rheumatism
8—Pneumonia—Phthisis
12—Paraplegia
13—Congenital Cardiac Disease
20—Acute Rheumatism
23—Acute Rheumatism—Chronic Alcoholism

ADDISON.

8—Rheumatism
11—Phthisis
18—Ulcer of Stomach
23—Cirrhosis of Liver
25—Phthisis
29—Jaundice—Dilated Aorta
30—Acute Rheumatism
32—Exophthalmic Goitre
35—Rheumatism
38—Neurosis—Diarrhœa
44—Infantile Paralysis

BRIGHT.

2—Morbus Cordis
4—Rheumatism
8—Rheumatism and Erysipelas
21—Rheumatism
23—Erysipelas of Face

SURGICAL WARDS.

ACCIDENT.

1—Fractured fibula
2—Fractured spine
4—Blood tumours in the groin and ulcers on leg
6—Fractured tibia and fibula
8—Contused side
14—Fractured tibia and fibula
15—Concussion of brain
16—Severe contusion of thighs
17—Fractured ribs, injury to lung, and injury to ankle
21—Fractured tibia and fibula
22—Fractured radius and injury to shoulder
30—Compound depressed fracture of skull, fractured ribs, injury to lungs, fractured spine, and injury to kidney

CORNELIUS.

1—Incised wound of ankle joint
3—Fractured ribs
5—Fractured clavicle and scapula
13—Crushed foot, amputation—Fractured clavicle—Compound fractured phalanx of thumb
18—Fractured femur

NAAMAN

14—Ulcers on leg
15—Fractured ribs—broncho-pneumonia

LUKE.

6—Axillary abscess
7—Chronic abscess
8—Anchylosis of inferior maxilla
10—Hydrocele
12—Urethral stricture
14—Spinal curvature—abscess and sinuses
19—Psoas abscess pointing in the groin

JOB.

4—Tumour of submaxillary gland
20—Tumour of the testicle
22—Papilloma of foot

LAZARUS.

5—Extravasation of urine
10—Ruptured urethra
15—Poisoned wound of foot

EYDIA

4—Fractured tibia and fibula, lacerated wound of shin, injury to popliteal artery, amputation through thigh
5—Cyst in thyroid

MARTHA.

9—Stone in bladder
18½—Ischio-rectal fistula

DORCAS.

1—Ovarian tumour
12—Cystic bronchocele

CHARITY.

7—Syphilitic ulceration of palate

OBSTETRIC CASES.

Reported by Mr. E. Hicks.

PUERPERAL FEVER—RECOVERY.

E. M., æt. 21.

Patient was a healthy-looking young woman; she was confined on the 4th July, the labour being perfectly normal. She went on well until the 7th, when she was taken with severe pain in the head and sweating, and in the evening had a slight rigor, the temperature being 102·2 and pulse 100; abdomen distended but flaccid, tongue furred, no lochia but abundance of milk. ℞ quiniæ sulph. gr. iv. every four hours, pil opii gr. ½ every four hours also.

July 6—Has a vacant expression, wandered much in the night. Temp. 103·5, pulse 120.

July 7—Somewhat better. Temp. 102, pulse 110.

July 8—Abdomen more distended but still flaccid, lactation ceased, much vomiting. Temp. 105·6, pulse 140.

July 9, at 10 a.m.—Patient was delirious all night; temp. 102·5, pulse 120. At 5 p.m., sweating profusely; temp. 105, pulse 140. At 9.30 p.m., called to see patient who was said to be dying; I found her insensible; hands and feet cold, and to all appearances dying; temp. 102·2, pulse 160. ℞ Quiniæ gr. x. with a tablespoonful of brandy every four hours.

July 10—Found her greatly improved in the morning, but in low muttering delirium; she continued in this same condition for five days, very delirious and at times quite maniacal, the temperature rose to 105 on three separate occasions.

July 11—Diarrhœa was very profuse. ℞ Pil opii gr. j. every four hours: quiniæ gr. v. every two hours and a half.

July 16—She regained her senses, but she then began to vomit severely, and the only thing she could keep on her stomach was quiniæ gr. v. every two hours and a half.

July 18—Vomiting less, slightly delirious again; looks somewhat improved, but has lost a good deal of flesh; takes milk and beef tea.

July 20—Improved; vomiting stopped; diarrhœa severe; the same treatment. Temp. has varied from 102 to 103·5, pulse 130 to 160.

July 21—Vomited twice; diarrhœa six times in the night; has again regained her senses. Pulse 160, very feeble; broncho-pneumonia.

July 23—In much the same condition; large bedsore on back become much reduced. Pulse 160, morning and evening. Opium stopped.

For the last week she remained in much the same condition, at one time better then worse again.

Aug. 1—She was removed to hospital, the bedsore having increased, owing to hardness of bed.

Aug. 4—She seemed better, but vomiting and diarrhœa still continued. Pulse 130 to 140, but temp. had gone down to just under the 100.

Aug. 10—Temp. has not again risen above 100; cough still very troublesome. Ordered some effervescing iron, but this could not be retained on her stomach; vomiting returned; quinine reduced to gr. xxx. per diem.

Aug. 11—Iron stopped; quiniæ 50 gr. again given.

Aug. 24—Patient has still continued to improve, bed sores are healing nicely, and patient is gradually regaining strength.

This case needs no comment, except that it was a most severe case of puerperal fever, in which recovery took place; whether the recovery was due to the heroic treatment of giving quiniæ 50 gr. a day I leave others to judge, the stomach certainly tolerated it better than anything else.

HÆMORRHAGE DURING PREGNANCY—RETAINED PLACENTA—PHLEBITIS—DEATH.

A. W., æt. 22, was admitted into No. 27, Mary Ward.

Patient had one child eighteen months ago; she was six months ill in bed after confinement. She bled all through her pregnancy whilst carrying this child. On July 30th she presented herself at the out-patients' room, saying that she was then six months pregnant, and ever since she had become pregnant she had continued to lose much blood, but not at the proper period lately, though at first it occurred at the regular times. On examination, the os uteri was found very soft and of a villous character; she was losing blood at the time. She was recommended for admission, but was unable to come in. The fœtal heart could be heard at the rate of 186 per minute.

Aug. 4—Patient come into hospital, stating that she had miscarried on the previous Friday evening, and that a medical man did not attend for twenty-four hours afterwards, and that the placenta was not removed at the time. On admission, the placenta was found *in situ*, but extremely adherent; she was sweating, having just had a rigor. The discharge was very offensive. Evening—Sweating profusely; the whole of the interior of the uterus was washed out with a solution of permanganate of potash; a large piece of placenta as big as the palm of one's hand was expelled in the washing. Temp. 105, pulse 132.

Aug. 5—P dicrotic and very feeble; small sphygmographic tracing was not unlike that of typhus fever. Temp. 104·2, pulse 134. Evening—Much the same, uterus again washed out, another severe rigor and much vomiting. Temp. 105, pulse 128.

Aug. 6—Has a yellowish tint and a hesitating mode of speaking, limbs tremble, diarrhœa severe. Temp. 101·2, pulse 134. Evening—Pulse markedly dicrotic; uterus washed out twice during the day. Temp. 101·2, pulse 132.

Aug. 7—Still weaker; yellow tint on face much less marked, wandering, another severe rigor, vomiting occasionally. Uterus washed out twice during twenty-four hours.

Aug. 8—Gradnally getting weaker, seems almost moribund: uterus not washed out, as she was too weak to be moved. ℞ Sodæ sulpho-carbolatis gr. x. tr. cinch. f. ʒ i. every four hours, quiniæ sulp. gr. iv. every four hours. Died in the latter part of the evening.

P.M.—Uterus of a dark colour, veins and sinuse full of pus, especially the right uterine vein, which was filled with pus to near its junction with the vena cava. In the ovarian and others there were remains of older phlebitis than could be accounted for by the present attack, and it seemed as if some of the blood which had escaped during pregnancy had given rise to phlebitis, and that the phlebitis was in this case the cause of the abortion, and not, as in many cases, the abortion the cause of the phlebitis. The decomposing placenta had no doubt given rise to the recent deposits of pus in the veins. The placenta was in some parts found to be completely adherent to the uterine wall, and it seems that no separation had taken place between the placenta and decidua serotina.

EXTRA-UTERINE FŒTATION.

E. R., æt. 28, was admitted into No. 27, Mary Ward.

The patient has been married eight years, but has had no children. She was always regular until six months ago, when she ceased to be so for two months and a half. She then received a blow on the stomach in falling down stairs, when menstruation returned, and she has continued to lose blood at intervals of two or three weeks up to the present time. At the time she had the fall she first noticed her stomach was larger, and her mammæ increased in size, and then some slight lactation took place. Her abdomen still continued to increase in size until six months ago, when she was taken with labour pains, and a medical practitioner was in attendance expecting delivery to take place, but on the third day the pains entirely left her, and the doctor told her that her labour had ceased because her womb was turned (retroverted ?). Since then her abdomen has become gradually smaller, but has not decreased much. She has been in good health, except that every now and then she has been taken with pains like labour pains.

On Admission, patient is a healthy-looking woman. Her abdomen is much increased in size, and filled with a hard tumour which on more careful examination may be divided into three portions, two of which are placed in the anterior part of the abdomen, partly filling up the flanks, the third, a much smaller one, is on the right side. The two in front are almost oval, one being placed above the umbilicus, and the other below. They are of firm consistence, and on the right hand side there is a projection very like the limb of a fœtus. The third tumour, in the right flank, has a semi-fluctuating feel. Per vaginam, os uteri is with great difficulty to be felt, but by the tip of the finger it can just be made out two inches above the crest of the pubes. At the upper part of the vagina and through the uterine wall a very hard mass can be felt, round, and not unlike the head of a child, and one or two nodules are to be felt on it. On abdominal palpation the lower tumour gives a decided impulse to the tumour felt per vaginam, and slight impulse may be also transmitted to the vagina from the upper tumour in the abdomen. The small tumour in the flank gives no impulse. No fœtal heart sounds to be heard.

No change took place until the evening of the third day after admission, when she was taken with labour pains at eight o'clock. At ten o'clock the vagina presented the appearance usual in the first stage of labour, being moist and covered with mucus. Dr. Galabin decided to put in a sea-tangle tent, to aid the diagnosis, and to expedite matters. Four sea-tangle tents were with great difficulty introduced. Opium ½gr. every four hours, was administered during the night. At nine the next morning the tents were removed, the os being dilated to the size of a shilling piece, but the vagina had now become dry, and all the labour pains had gone off. A sound was then passed, and it went four inches and a half—as high as the umbilicus, and a little to the left side. She had no more pains for three days, when her bowels were relieved, and she again had labour pains and a discharge, which lasted a day and a half. The discharge resembled the menstrual discharge.

A month or two has now passed, and she remains in much the same condition, except that the tumour felt per vaginam comes lower down, and the nodules feel more like the edges of the cranial bones than they did. The os uteri is now more readily detected.

The case presents great interest, for it admitted of one or two explanations—either that there was an extremely retroverted uterus, with a dead fœtus retained, or an extra uterine fœtation with the uterus pushed a bove the pubes. There can be little doubt now that this is a case of extra-uterine fœtation; from the fact of the enlargement of the uterus; from pains simulating labour pains coming on most probably at a menstrual period, and also from the irritation caused by a purgative. How then, you will say, can the fact of two tumours in the abdomen be accounted for? It is probable that the upper one may be placenta, and the lower one

the fœtus. Of course owing to the complications of the case and the excellent health of the patient, any active interference would at present be contraindicated, it being an acknowledged fact that it is best in extra-uterine cases to leave Nature to decide the opening, and then to cut down and remove what it is possible to take away.

EXTRA-UTERINE FŒTATION — PERITONITIS — RECOVERY.

E. T., æt. 22, was admitted into No. 44, Mary Ward.

On the 14th I attended this woman as an out-patient in Kent Street. Married, no children. She was then suffering from a very acute attack of peritonitis. She gave the following history:—Three weeks previously she had received a blow in the abdomen from a drunken woman, who was passing the door; she believed herself about that time to be a little over four months pregnant. She continued to feel pain until the 11th July, when on walking about the house she was taken suddenly ill with a severe pain in the lower part of the abdomen and she fainted away; she then began to vomit and continued to do so for a day and a half. On the third day from the attack, that is on the 14th July, I found her with very acute symptoms of peritonitis; abdomen much distended, and tympanitic. Vaginal examination discovered only a soft and patulous os uteri, fixed, and surrounded by a firm swelling both before and behind. ℞ pil opii gr. j. every four hours. Her peritonitis by degrees gradually subsided, during which she had occasional diarrhœa and vomiting.

July 26—A fœtal heart sound was detected, and the abdomen was dull almost to the umbilicus.

Aug. 10—She was so much improved as to be able to be removed to the hospital.

Aug. 17—She was able to get about, but since the first no fœtal heart sound has been detected.

Aug. 25—No fœtal heart sound has been heard since, and dullness has decreased. A tumour can be now felt on right side of the uterus, globular, and filling up the right inguinal region: no fœtal heart sound to be heard.

This then seems, like the last, to be a case of extra-uterine fœtation—the first one being no doubt abdominal, the second one tubal. They have both become encysted, the most hopeful termination possible. The advisability of performing abdominal section in these cases, when they are first discovered, has been much discussed, some having argued that the right treatment would be to remove the foreign body from the abdomen at once, so as to avoid peritonitis and sequelæ. But inasmuch as these cases present so many difficulties of diagnosis at the first, and many cases are on record where results as favourable as those recorded have taken place through rest and opium, the abdomen in time having become accustomed to the presence of the fœtus, it is probably better not to interfere. Cases like these, then, left to Nature, give as fair a hope of recovery as cases if treated by abdominal section.

CORRESPONDENCE.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor.

Sir,—In the absence of Mr. Jumeaux, the hon. sec. and treasurer of the Janitor Fund, will you allow me as one of the committee to make a short reply, in answer to a letter that appeared in your last issue.

It was the original intention of the committee to raise as large a sum as possible so as to place the janitor in a business near the hospital. With that object in view a sum of upwards of £40 was raised, of which sum £27 was actually received, but the remainder was in promises, and as the vacation came on, it was resolved at the last committee meeting that the account should be kept open till the middle of next month, when men who had promised their subscriptions, and are at present in the country, would be able to fulfil their agreement. It was also resolved that a general meeting of the subscribers should be held in the early part of October, to settle definitely what should be done, when the committee will be happy to receive any suggestions as to the fit disposal of the money.

Regretting that there should be any necessity for this letter—Yours, &c.,

HAROLD M. POWELL.

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COMMUNICATIONS RECEIVED.

Mr. F. Cockle, Dr. Owen Coleman, Mr. John Couch.

M.O.C.—We shall be most happy to publish any communications from old Guy's Men.

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GUY'S HOSPITAL.—The MEDICAL SESSION commences in October. The Introductory Address will be given by Sir WILLIAM GULL, Bart., on THURSDAY, OCTOBER 1, at Two o'clock.

MEDICAL OFFICERS.

Consulting Physicians—Sir W. Gull, Bart., M.D, F.R.S; G. Owen Rees, M.D, F.R.S
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Printed and Published for the Proprietors by O. G. BRIMMER 104 Borough High-street, Southwark, Surrey.—Saturday, September 26, 1874

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